GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:31:03 ; Search time 76.78 Seconds
(without alignments)
194.454 Million cell updates/sec

Title: US-09-534-376A-8_COPY_32_227
Perfect score: 1058
Sequence: 1 FESGLDLSDAEPDAGEATAY.....SCRCMSKLDVYRQVHSIIRR 196

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1058	100.0	419	2	S69207	vascular endothelial
2	195	18.5	242	2	A41551	vascular endothelial
3	188.5	17.9	190	2	S52130	vascular endothelial
4	175.5	16.7	190	2	B40080	ovine vascular end
5	173.5	16.5	146	2	S57956	vascular endothelial
6	173.5	16.5	190	2	B44881	vascular endothelial
7	173.5	16.5	214	2	A44881	vascular endothelial
8	172.5	16.4	120	2	A33787	glioma-derived vas
9	172.5	16.4	190	2	A35987	16K vascular endot
10	160	15.2	148	2	D49530	vascular endothelial
11	159.5	15.1	133	2	B49530	placental growth f
12	151	14.3	149	2	A41236	vascular endothelial
13	148.5	14.1	188	2	JC4680	vascular endothelial
14	148.5	14.1	207	2	JC4679	placental growth f
15	144	13.7	158	2	A56125	platelet-derived g
16	133	12.6	245	1	TVCTSS	vascular endothelial
17	129	12.3	128	2	I51295	platelet-derived g
18	128	12.2	200	2	I51551	platelet-derived g
19	128	12.2	225	2	S25097	platelet-derived g
20	128	12.2	241	1	PFHUG2	platelet-derived g
21	126	12.0	241	1	PFMSGB	PDGF-related trans
22	125.5	11.9	226	1	TVMVSS	platelet-derived g
23	124	11.8	215	2	S08220	platelet-derived g
24	124	11.8	226	2	I51550	PDGF-related trans
25	116	11.0	271	2	A25669	platelet-derived g
26	111	10.5	196	2	B28964	platelet-derived g
27	111	10.5	211	1	PFHUG1	platelet-derived g
28	106	10.1	197	2	S25096	platelet-derived g
29	103	9.8	196	2	A37459	platelet-derived g
30	102.5	9.7	166	2	JN0248	platelet-derived g
31	102.5	9.7	198	2	JS0735	platelet-derived g
32	101	9.6	196	2	A48851	glycoprotein hormo
33	95	9.0	120	2	A39555	metalloproteinase
34	88	8.4	617	2	S48160	follitropin alpha
35	85.5	8.1	96	2	S74086	gonadotropin alpha
36	85.5	8.1	118	2	S16762	glycoprotein hormo
37	85.5	8.1	118	2	A60626	glycoprotein hormo
38	84.5	8.0	118	1	UTCAA	glycoprotein hormo
39	84.5	8.0	118	2	A40554	hypothetical prote
40	84.5	8.0	225	2	T27211	glycoprotein hormo
41	83.5	7.9	120	2	A45585	pituitary glycopro
42	83.5	7.9	120	2	I51241	phenylalanine--tRN
43	83.5	7.9	503	1	YFBYAC	envelope polyprote
44	83.5	7.9	853	2	S54384	hypothetical prote
45	82.5	7.8	676	2	F85107	

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N;Alternate names: FLT4 ligand DHM
C;Species: Homo sapiens (man)
C;Date: 27-Apr-1996 #sequence_revision 01-Nov-1996 #text_change 08-Oct-1999
C;Accession: S69207; S61795; S71443; S07268; G02659
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksel
EMBO J. 15, 1751, 1996
A;Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand
A;Reference number: S69207; MUID:96203094
A;Accession: S69207
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-419 <JOU>
A;Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:g221096; PID:g118
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A;Note: only a part of the translation is shown
A;Note: this is a revision to the sequence from reference S61795
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksel
EMBO J. 15, 290-298, 1996
A;Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4
A;Reference number: S61795; MUID:96178224
A;Accession: S61795
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 70-419 <JOU1>
A;Note: this sequence has been revised in reference S69207
A;Accession: S71443
A;Molecule type: protein
A;Residues: 'X',104-120 <JOU2>
R;Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A;Description: Vascular endothelial growth factor related protein (VRP): A ligand and
A;Reference number: S69208
A;Accession: S69208
A;Molecule type: mRNA
A;Residues: 1-419 <LEE>
A;Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R;Morris, J.C.
submitted to the EMBL Data Library, May 1996
A;Reference number: H01557
A;Accession: G02659
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-419 <MOR>
A;Cross-references: EMBL:U58111; NID:g1373426; PIDN:AAB02909.1; PID:g1373427
C;Genetics:
A;Gene: GDB:VEGFC; VRP
A;Cross-references: GDB:3890883; OMIM:601528
F;1-12/Domain: signal sequence #status predicted <SIG>
F;13-102/Domain: propeptide #status predicted <PRO>

```
F;103-419/Product: vascular endothelial growth factor C #status experimental -MAT-


  Query Match             100.0%;  Score 1053;  DB 2;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 8e-90;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        1 PESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ  60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       32 PESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ  91

Qy       61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF  120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       92 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF  151

Qy      121 FKPPSCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC  180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      152 FKPPSCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC  211

Qy      181 MSKLDVYRQVHSIIRR 196
            ||||||||||||||||
Db      212 MSKLDVYRQVHSIIRR 227


RESULT   2
A41551
vascular endothelial growth factor 206 precursor - human
N;Alternate names: vascular permeability factor
N;Contains: vascular endothelial growth factor 121 (VEGF 121), VEGF 165, VEGF 189, VEGF
C;Species: Homo sapiens (man)
C;Date: 28-Aug-1992 #sequence_revision 28-Aug-1992 #text_change 05-Nov-1999
C;Accession: A41551; C41551; B41551; A40454; B40454; C40454; A40079; A40080; JQ1463; JQ1
R;Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A;Title: The vascular endothelial growth factor family: identification of a fourth molec
A;Reference number: A41551; MUID:92168017
A;Accession: A41551
A;Molecule type: mRNA
A;Residues: 1-232 <HOU>
A;Cross-references: GB:M73160; NID:g340155; PID:g216257
A;Accession: C41551
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-140,'N',184-232 <HOU2>
A;Accession: B41551
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-141,227-232 <HOU>
R;Fischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Sondel, P.; Hudson, T.; Al
J. Biol. Chem. 266, 11947-11954, 1991
A;Title: The human gene for vascular endothelial growth factor. Multiple protein forms a
A;Reference number: A40454; MUID:91258072
A;Accession: A40454
A;Molecule type: DNA
A;Residues: 1-165,184-232 <FIS>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63976; GB
A;Accession: B40454
A;Molecule type: DNA
A;Residues: 1-140,'N',184-232 <FI2>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63977; GB
A;Accession: C40454
A;Molecule type: DNA
A;Residues: 1-141,227-232 <FI3>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978
R;Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.T.
Science 246, 1309-1312, 1989
A;Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.
A;Reference number: A40079; MUID:90006609
A;Accession: A40079
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-165,184-232 <KEC>
A;Cross-references: GB:M27281; NID:g340400; PIDN:AAA36807.1; PID:g340401
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A;Reference number: A40080; MUID:90006608
A;Accession: A40080
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-141,'N',183-232 <LEU>
A;Cross-references: GB:M32977; NID:g181970; PIDN:AAA35789.1; PID:g181971
R;Weindel, K.; Marmee, D.; Welch, B.A.
Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992
A;Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endotheli
A;Reference number: JQ1463; MUID:92231879
A;Accession: JQ1463
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 <WEI>
A;Cross-references: EMBL:X62568; NID:g37658; PIDN:CAA44447.1; PID:g37659
A;Experimental source: AIDS-Kaposi's sarcoma cell
A;Accession: JQ1464
A;Molecule type: mRNA
A;Residues: 1-140,'N',227-232 <WE2>
A;Experimental source: AIDS Kaposi's sarcoma cell
R;Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.;
J. Biol. Chem. 264, 20017-20024, 1989
A;Title: Human vascular permeability factor. Isolation from U937 cells.
A;Reference number: A34492; MUID:90062112
A;Accession: A34492
A;Molecule type: protein
A;Residues: 27-46;48-49,'R';72-76,'Q',78-81;59-71 <CON>
C;Comment: The most common of several alternatively spliced forms is VEGF 165.
C;Genetics:
A;Gene: GDB:VEGF
A;Cross-references: GDB:132244; OMIM:192240
A;Map position: 6p21-6p12
C;Function:
A;Description: promotes fluid and protein leakage from blood vessels
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular
F;1-232/Product: vascular endothelial growth factor 206 precursor #status predicted -
F;1-165,184-232/Product: vascular endothelial growth factor 189 precursor #status pre
F;1-141,227-232/Product: vascular endothelial growth factor 121 precursor #status pre
F;1-26/Domain: signal sequence #status predicted -SIG-
F;101/Binding site: carbohydrate (Asn) (covalent) #status predicted


  Query Match              18.5%;  Score 195;  DB 2;  Length 232;
  Best Local Similarity    28.5%;  Pred. No. 1.1e-10;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;

Qy      88 LMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRK  97
           |:  |:  |          ||  |:              |:||             : :::
Db      14 LELYLHHAKWSQAAPMAEGGGQNHH-----------EVVKFM-------------DVYQR  49

Qy      98 TQCMPREVCIDVGKEFGVATNFFKPPSCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI  157
           : | |  :|: ::         ||| || : |||||| |||:| |  | ::  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI  109

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 195
           ||     :|| |  | | | |  ||    :|
Db     110 KP--HQGQHIGEMSFLQHNKCECKPKKDRARQEAKSVR 145


RESULT   3
S52130
vascular endothelial growth factor - pig
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
C;Accession: S52130
R;Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
Biochim. Biophys. Acta 1260, 245-248, 1995
A;Title: Nucleotide sequence and expression of the porcine vascular endothelial growt
A;Reference number: S52130; MUID:95143284
A;Accession: S52130
A;Status: preliminary
```

A;Molecule type: mRNA
A;Residues: 1-190 <SHA>
A;Cross-references: GB:X81380; NID:g587559; PIDN:CAA57143.1; PID:g587560

Query Match 17.9%; Score 188.5; DB 2; Length 190;
Best Local Similarity 29.8%; Pred. No. 3.5e-10;
Matches 42; Conservative 18; Mismatches 56; Indels 25; Gaps 3;

Qy 54 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
Db 18 LHHAKWSQAAPMAEGGQKPHEVVKFM----------DVYQRSYCRPIETLVDIFQEY 64

Qy 114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL-----SQGPKPV 168
Db 65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-------FNIIMQIMRIKPHQGQHIG 117

Qy 169 IISFANHTSCRCMSKLDVYRQ 189
Db 118 EMSFLQHNKCECRPKKDRARQ 138

RESULT 4
B40080
vascular endothelial growth factor precursor (version 2) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 05-Nov-1999
C;Accession: B40080; B33787; A33255
R;Tischer, E.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen
A;Reference number: A40080; MUID:90069608
A;Accession: B40080
A;Molecule type: mRNA
A;Residues: 1-190 <TIS>
A;Cross-references: GB:M32977; NID:g340600; PIDN:AAA36502.1; PID:g163007
R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisp
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet-derived growth
A;Reference number: A33787; MUID:90121225
A;Accession: B33787
A;Molecule type: mRNA
A;Residues: 27-190 <TIS>
A;Cross-references: GB:M31836; NID:g163808; PIDN:AAA30804.1; PID:g163809
R;Ferrara, N.; Henzel, W.J.
Biochem. Biophys. Res. Commun. 161, 851-858, 1989
A;Title: Pituitary follicular cells secrete a novel heparin-binding growth factor specif
A;Reference number: A33255; MUID:89286596
A;Accession: A33255
A;Molecule type: protein
A;Residues: 27-31 <FER>
C;Keywords: alternative splicing; glycoprotein
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-190/Product: vascular endothelial growth factor #status predicted <MAT>
F;100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 16.7%; Score 175.5; DB 2; Length 190;
Best Local Similarity 29.0%; Pred. No. 5.5e-09;
Matches 40; Conservative 18; Mismatches 61; Indels 19; Gaps 3;

Qy 54 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
Db 18 LHHAKWSQAAPMAEGGQKPHEVVKFM----------DVYQRSFCRPIETLVDIFQEY 64

Qy 114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
Db 65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNIIMQIMRIKPHQSQHIG----EMS 120

Qy 172 FANHTSCRCMSKLDVYRQ 189
Db 121 FLQHNKCECRPKKDKARQ 138

RESULT 5
S57956
vascular endothelial growth factor - sheep
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 05-Nov-1999
C;Accession: S57956
R;Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.
submitted to the EMBL Data Library, July 1995
A;Reference number: S57956
A;Accession: S57956
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-146 <RED>
A;Cross-references: EMBL:X89506; NID:g899350; PIDN:CAA61677.1; PID:g899351

Query Match 16.5%; Score 173.5; DB 2; Length 146;
Best Local Similarity 29.0%; Pred. No. 6.3e-09;
Matches 40; Conservative 18; Mismatches 61; Indels 19; Gaps 3;

Qy 54 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
Db 18 LHHAKWSQAAPMAEGGQKPHEVMKFM----------DVYQRSFCRPIETLVDIFQEY 64

Qy 114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
Db 65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNIIMQIMRIKPHQSQHIG----EMS 120

Qy 172 FANHTSCRCMSKLDVYRQ 189
Db 121 FLQHNFCECRPKKDPARQ 138

RESULT 6
B44881
vascular endothelial growth factor-1 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999
C;Accession: B44881; A43351; A61029
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A;Reference number: A44881; MUID:92274860
A;Accession: B44881
A;Molecule type: mRNA
A;Residues: 1-190 <BRE>
A;Cross-references: GB:S38083; NID:g249858; PIDN:AAB22253.1; PID:g249859
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)
R;Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.
J. Biol. Chem. 267, 16317-16322, 1992
A;Title: Vascular endothelial growth factor. Regulation by cell differentiation and a
A;Reference number: A43351; MUID:92355593
A;Accession: A43351
A;Molecule type: mRNA
A;Residues: 1-116;'EE';114-190 <CLA>
A;Cross-references: GB:M95200; NID:g202350; PIDN:AAA40547.1; PID:g202351
A;Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)
R;Rosenthal, R.A.; Meqyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.
Growth Factors 4, 53-59, 1990
A;Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelia
A;Reference number: A61029; MUID:91197543
A;Accession: A61029
A;Molecule type: protein
A;Residues: 27-38 <EOS>
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein;

Query Match 16.5%; Score 173.5; DB 2; Length 190;
Best Local Similarity 29.1%; Pred. No. 8.5e-09;
Matches 39; Conservative 19; Mismatches 57; Indels 19; Gaps 3;

```
Qy      54 LRRGSWQHNPEQANLNSATEELKEAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
           |   |           :: | |||                 : :::: | | |  :|: :|:
Db      18 LHHAKWSQAAPITEGEQKSNEVIKEM - ---- ---- DVYQRSYCRPIETLVDIFQEYP 64

Qy     114 GVAINTEFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
                 ||| || : || |||| | |:|: || | ::   :  |    ||  |      :|
Db      65 PDETEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG---EMS 120

Qy     172 FANHTSCRCMSKLD 185
           |  |: | |  | |
Db     121 FLQHSRCECRPKKD 134


RESULT   7
A44881
vascular endothelial growth factor 3 precursor - mouse
N;Contains: vascular endothelial growth factor 2; vascular permeability factor
C;Species: Mus musculus (house mouse)
C;Date: 04-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999
C;Accession: A44881; C44881; A60932; S52136
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A;Reference number: A44881; MUID:92274860
A;Accession: A44881
A;Molecule type: mRNA
A;Residues: 1-214 <BRE>
A;Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)
A;Accession: C44881
A;Molecule type: mRNA
A;Residues: 1-140,209-214 <BRE>
A;Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861
A;Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)
R;Claesson, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan, Y.C.
J. Exp. Med. 172, 1535-1545, 1990
A;Title: Vascular permeability factor: a tumor-derived polypeptide that induces endothel
A;Reference number: A60932; MUID:91079755
A;Accession: A60932
A;Molecule type: protein
A;Residues: 27-33 <CLA>
R;Senthara, F.; Kaul, S.C.; Mitsui, Y.; Wadhwa, R.
Biochim. Biophys. Acta 1224, 365-370, 1994
A;Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous im
A;Reference number: S52136; MUID:95101726
A;Accession: S52136
A;Status: preliminary
A;Molecule type: protein
A;Residues: 27-46 <SHO>
C;Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
C;Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homodimer;
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-214/Product: vascular endothelial growth factor 3 #status experimental <MAT>


  Query Match             16.5%;  Score 174.5;  DB 2;  Length 214;
  Best Local Similarity   29.1%;  Pred. No. 9.7e-09;
  Matches   99;  Conservative   19;  Mismatches   57;  Indels   19;  Gaps    3;

Qy      54 LRRGSWQHNPEQANLNSATEELKEAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
           |   |           :: | |||                 : :::: | | |  :|: :|:
Db      18 LHHAKWSQAAPITEGEQKSNEVIKEM - ---- ---- DVYQRSYCRPIETLVDIFQEYP 64

Qy     114 GVAINTEFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
                 ||| || : || |||| | |:|: || | ::   :  |    ||  |      :|
Db      65 PDETEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG---EMS 120

Qy     172 FANHTSCRCMSKLD 185
           |  |: | |  | |
Db     121 FLQHSRCECRPKKD 134


RESULT   8
A33787
vascular endothelial growth factor (version 1) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 05-Nov-1999
C;Accession: A33787
R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet derived gro
A;Reference number: A33787; MUID:90121225
A;Accession: A33787
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-120 <TIS>
A;Cross-references: GB:M33750; NID:g163810; PIDN:AAA30805.1; PID:g163811
C;Keywords: alternative splicing


  Query Match             16.4%;  Score 172.5;  DB 2;  Length 120;
  Best Local Similarity   34.9%;  Pred. No. 6.2e-09;
  Matches   37;  Conservative   18;  Mismatches   44;  Indels    7;  Gaps    3;

Qy      80 PSESSIQNEWRKTQCMPREVCIDVGKEFGVAINTEFKPPCVSVYRCGGCCNSEGLQCMNT 145
           |:|| :|  :::: | | |  :|: :|:       ||| || : |||||||  | |:|: |
Db      12 EVVKPMD VYQRSFCRPIETLVDIFQEYPDEIEFIFKPSCVPLMRCGGCCNDESLECVPT 70

Qy     146 STSYLSKTLFEITVPLSQ- GPKPVTISFANHTSCRCMSKLDVYRQ 189
                 ::  :  |    ||  |     :||  | | | | |  ||
Db      71 EEPNITMQIMRIKPHQSQHIG----EMSFLQHNRCECRPKKDRAR 112


RESULT   9
A35987
glioma-derived vascular endothelial cell growth factor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
C;Accession: A35987
R;Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Ho
Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
A;Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is
A;Reference number: A35987; MUID:90207249
A;Accession: A35987
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-190 <CON>
A;Cross-references: GB:M32167; NID:g204287; PIDN:AAA41211.1; PID:g204288


  Query Match             16.4%;  Score 172.5;  DB 2;  Length 190;
  Best Local Similarity   33.1%;  Pred. No. 1e-08;
  Matches   42;  Conservative   22;  Mismatches   50;  Indels   13;  Gaps    5;

Qy      61 HNREQANLNSATEELKEAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVAINTE 120
           |: : :     ||  |  ||   |:|: :|  :::: | | |  :|: :|:
Db      19 HHAKWSQAAPITEGEQK---AR---EVVKPMD VYQRSYCRPIETLVDIFQEYPDEIEYI 71

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ- GPKPVTISFANHTSC 178
           ||| || : || |||| | |:|: || | ::   :  |    ||  |     :||  |:|
Db      72 FKPSCVPLMRCAGCCNDEALECVPTSESNVIMQIMRIKPHQSQHIG  --EMSFLQHSRC 127

Qy     179 RCMSKLD 185
           |  | |
Db     128 ECRPKKD 134


RESULT  10
D49530
16K vascular endothelial growth factor homolog AZR - orf virus
C;Species: orf virus
C;Date: 07-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 08-Oct-1999
C;Accession: D49530
R;Lyttle, D.J.; Fraser, K.M.; Fleming, S.B.; Mercer, A.A.; Robinson, A.J.
J. Virol. 68, 84-92, 1994
```

```
A;Title: Homologs of vascular endothelial growth factor are encoded by the poxvirus orf
A;Reference number: A49530; MUID:94076465
A;Contents: NZ7
A;Accession: B49530
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-148 <LYT>
A;Cross-references: GB:S67522; NID:g456900; PIDN:AAB29229.1; PID:g456902
A;Note: sequence extracted from NCBI backbone (NCBIN:141422, NCBIP:141426)

  Query Match              15.2%;  Score 160;  DB 2;  Length 148;
  Best Local Similarity    32.7%;  Pred. No. 1.1e-07;
  Matches   34;  Conservative   15;  Mismatches   43;  Indels   10;  Gaps    2;

Qy      93 NEWRKT----QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTS 148
           |:|: :|     | ||:  : :|:|:  :||  : | ||:| || |||| :|  |    |
Db      35 NDWMRTLDKSGCKPRDTVVYLGEEYPESTNLQYNPRCVTVKPCSGCCNGDGQICTAVETR 94

Qy     149 YLSKTLFEITVPLSQGPKP------VTISFANHTSCRCMSK 183
           : |:    | | |             || || | . :
Db      95 NITVTVSVTGVSSSSGTNSGVSTNLQRISVTEHTKCDCIGR 135


RESULT  11
B49530
vascular endothelial growth factor homolog A2R, 14.7K - Orf virus
C;Species: Orf virus
C;Date: 07-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 08-Oct-1999
C;Accession: B49530
R;Lyttle, D.J.; Fraser, K.M.; Fleming, S.B.; Mercer, A.A.; Robinson, A.J.
J. Virol. 68, 84-92, 1994
A;Title: Homologs of vascular endothelial growth factor are encoded by the poxvirus orf
A;Reference number: A49530; MUID:94076465
A;Contents: NZ2
A;Accession: B49530
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-133 <LYT>
A;Cross-references: GB:S67520; NID:g456897; PIDN:AAB29226.1; PID:g456899
A;Note: sequence inconsistent with nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:141420, NCBIP:141425)

  Query Match              15.1%;  Score 159.5;  DB 2;  Length 133;
  Best Local Similarity    33.3%;  Pred. No. 1.1e-07;
  Matches   32;  Conservative   17;  Mismatches   38;  Indels    9;  Gaps    2;

Qy      85 IEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMN 144
           :|:||          :| || : : | :     |:  | ||||:: |||||| | |:|:
Db      28 SEVLKG-------SECKPRPIVVPVSETHPELISQKFNFPCVILMCGGCCNDESLECVP 80

Qy     145 TSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           |    ::  |  :   | | :   :||  |  | |
Db      81 IEEVNVTMELLGASGSGSNGMQ--RLSFVEHKKCDC 114


RESULT  12
A41236
placental growth factor precursor - human
C;Species: Homo sapiens (man)
C;Date: 19-Jun-1992 #sequence_revision 19-Jun-1992 #text_change 05-Nov-1999
C;Accession: A41236
R;Maglione, D.; Guerriero, V.; Viglietto, G.; Delli-Bovi, P.; Persico, M.G.
Proc. Natl. Acad. Sci. U.S.A. 88, 9267-9271, 1991
A;Title: Isolation of a human placenta cDNA coding for a protein related to the vascular
A;Reference number: A41236; MUID:92021031
A;Accession: A41236
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-149 <MAG>
A;Cross-references: GB:X54936; NID:g35521; PIDN:CAA38698.1; PID:g35522
C;Genetics:
A;Gene: GDB:PGF
A;Cross-references: GDB:134676; OMIM:601121
A;Map position: 14q24-14q31

  Query Match              14.3%;  Score 151;  DB 2;  Length 149;
  Best Local Similarity    33.0%;  Pred. No. 7.8e-07;
  Matches   29;  Conservative   14;  Mismatches   39;  Indels    6;  Gaps    2;

Qy      95 WRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTL 154
           | :: |   |  :||  |:        | | |||: || |||  | | |:   |: ::  |
Db      47 WGKSYCKALERLVDVVSEYPSEVEHMFSPSCVSLLRCTGCCGDENLHCVPVETANVTMQL 106

Qy     155 FEITVPLSQGPKP--VTISFANHTSCRC 180
           :|       | :|  | ::|: |  | |
Db     107 LKI----RSGDRPSYVELTFSQHVRCEC 130


RESULT  13
JC4680
vascular endothelial growth factor-related factor 167 precursor - mouse
N;Alternate names: VRF 167 protein
C;Species: Mus musculus (house mouse)
C;Date: 10-May-1996 #sequence_revision 19-Jul-1996 #text_change 05-Nov-1999
C;Accession: JC4680
R;Townson, S.; Lagercrantz, J.; Grimmond, S.; Silins, G.; Nordenskjoeld, M.; Weber, G
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A;Title: Characterization of the murine VEGF-related factor gene.
A;Reference number: JC4679; MUID:96183052
A;Accession: JC4680
A;Molecule type: mRNA
A;Residues: 1-188 <TOW>
A;Cross-references: GB:U43837; NID:g1314335; PIDN:AAC52553.1; PID:g1314336
C;Comment: This factor is a mitogen, that is selective for endothelial cells, and bel
ar endothelial growth factors 167 and VEGF 186.
C;Genetics:
A;Gene: vrf
A;Map position: 19
A;Introns: 137/2
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-188/Product: vascular endothelial growth factor-related factor #status predicted

  Query Match              14.1%;  Score 148.5;  DB 2;  Length 188;
  Best Local Similarity    31.3%;  Pred. No. 1.7e-06;
  Matches   36;  Conservative   19;  Mismatches   55;  Indels    5;  Gaps    3;

Qy      70 SRTEETI-KFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSV 128
           :||.  . :|    :  :: |     ||   | | | |||| : :  |          | ||:|
Db      17 ARTQAPVSQFDGPSHQKKVVPWIDVYARAT-CQPREVVVPLSMELMGNVVKQLVPSCVTV 75

Qy     129 YRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSK 183
           ||||||  :||:|: |   :   :  | | ||  :   :|   |: | | |
Db      76 QRCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE---MSLEEHSQCECKPK 127


RESULT  14
JC4679
vascular endothelial growth factor-related factor 186 precursor - mouse
N;Alternate names: VRF 186 protein, VEGF 186
C;Species: Mus musculus (house mouse)
C;Date: 10-May-1996 #sequence_revision 19-Jul-1996 #text_change 05-Nov-1999
C;Accession: JC4679
R;Townson, S.; Lagercrantz, J.; Grimmond, S.; Silins, G.; Nordenskjoeld, M.; Weber, G
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A;Title: Characterization of the murine VEGF-related factor gene.
A;Reference number: JC4679; MUID:96183052
A;Accession: JC4679
A;Molecule type: mRNA
A;Residues: 1-207 <TOW>
A;Cross-references: GB:U43836; NID:g1703480; PIDN:AAC52932.1; PID:g1314334
C;Comment: This factor is a mitogen, that is selective for endothelial cells, and bel
ar endothelial growth factors 167 and 186.
```

```
C;Species:
A;Gene: vrf
A;Map position: 19
C;Keywords: growth factor
F;1 21/Domain: signal sequence #status predicted <SIG>
F;22 207/Product: vascular endothelial growth factor related factor #status predicted <M


  Query Match              14.1%;  Score 148.5;  DB 2;  Length 207;
  Best Local Similarity    41.3%;  Pred. No. 1.9e-06;
  Matches   96;  Conservative   19;  Mismatches   95;  Indels    5;  Gaps    3;

Qy      70 SRIEETI KFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSV 128
           :||:  : :|    :  :::  ||   | | | |||| : :  |           | ||:|
Db      17 ARTQAPVSQETDGPSHQKKVVPWTDVYARAT CQPREVVVPLSMELMGNVVKQLVPSCVTV 75

Qy     129 YRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSK 183
           |||||| :||:|: |    :   :  | | || :   :|  |: | |  |
Db      76 QRCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE  MSLEEHSQCECRPK 127


RESULT  15
A56125
placental growth factor precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 19-Oct-1995 #sequence_revision 19-Oct-1995 #text_change 06-Nov-1999
C;Accession: A56125
R;DiSalvo, J.; Payne, M.J.; Cohn, C.; Kwok, P.W.; Trivedi, P.G.; Soderman, D.D.; Palisi,
J. Biol. Chem. 270, 7717-7723, 1995
A;Title: Purification and characterization of a naturally occurring vascular endothelial
A;Reference number: A56125; MUID:95221439
A;Accession: A56125
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-158 <DIS>
A;Cross-reference: GB:L40040; NID:g1263413; PIDN:AAA97426.1; PID:g1263414
C;Keywords: glycoprotein


  Query Match              13.7%;  Score 144;  DB 2;  Length 158;
  Best Local Similarity    27.1%;  Pred. No. 3.7e-06;
  Matches   89;  Conservative   24;  Mismatches   59;  Indels   22;  Gaps    6;

Qy      48 KMYKC QLRKGGWQHNKE QANLNSRTEETIKFAAAHYNTEILKSIDNE WRKTQCMP 102
           |:: |  |:  |   |::   |  ||   | : |              || | :: | |
Db       5 KLETCFLQVLAGLAVHSQGALSAGNNSTEMEVVPF      -  -  -  NEVWGRSYCRP 50

Qy     103 REVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSISYLSKTLFEITVPLS 162
           |   :  :  |      :  | | ||  : :|  |||  ||| |:   |: ::   : :|  | :
Db      51 MEKLVYIADEHPNEVSHIFSPSCVLLSRCSGCCGDEGLHCVALKTANITMQILKI  PPN 108

Qy     163 QGPKP VTISFANHTSCRCMSKLD 185
           : |   | ::|:    | |   |:
Db     109 RDPRSYVEMIFSQDVLCECRPILE 132


Search completed: December 26, 2001, 11:31:03
Job time: 431 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:44:01 ; Search time 40.89 Seconds
(without alignments)
175.747 Million cell updates/sec

Title: US-09-534-376A-8_COPY_32_227
Perfect score: 1053
Sequence: 1 FESGLDLSDAEPDAGEATAY.....SCRCMSKLDVYRQVHSIIRR 196

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	1053	100.0	419	1	VEGC_HUMAN	P49767 homo sapien
2	931	88.4	415	1	VEGC_MOUSE	P97953 mus musculu
3	195	18.5	215	1	VEGF_HUMAN	P49151 sus scrofa
4	188.5	17.9	190	1	VEGF_PIG	P15691 bos taurus
5	175.5	16.7	190	1	VEGF_BOVIN	P50412 ovis aries
6	173.5	16.5	146	1	VEGF_SHEEP	Q00731 mus musculu
7	173.5	16.5	214	1	VEGF_MOUSE	P26617 cavia porce
8	172.5	16.4	164	1	VEGF_CAVPO	P16612 rattus norv
9	172.5	16.4	190	1	VEGF_RAT	P52584 orf virus (
10	162.5	15.4	133	1	VEGH_ORFN2	P52585 orf virus (
11	160	15.2	148	1	VEGH_ORFN7	P49763 homo sapien
12	150	14.2	170	1	PLGF_HUMAN	P52582 gallus gall
13	150	14.2	216	1	VEGF_CHICK	P49766 mus musculu
14	148.5	14.1	188	1	VEGB_MOUSE	P49765 homo sapien
15	145	13.8	188	1	VEGB_HUMAN	P49764 mus musculu
16	142	13.5	158	1	PLGF_MOUSE	P12919 felis silve
17	133	12.6	245	1	PDGB_FELCA	Q95229 ovis aries
18	129	12.3	241	1	PDGB_SHEEP	Q05028 rattus norv
19	128	12.2	225	1	PDGB_RAT	P01127 homo sapien
20	128	12.2	241	1	PDGB_HUMAN	P31240 mus musculu
21	126	12.0	241	1	PDGB_MOUSE	P01128 simian sarc
22	125.5	11.9	226	1	TS1S_SMSAV	P13698 xenopus lae
23	124	11.8	226	1	PDGA_XENLA	P04085 homo sapien
24	111	10.5	211	1	PDGA_HUMAN	P28576 rattus norv
25	106	10.1	204	1	PDGA_RAT	P20033 mus musculu
26	103	9.8	211	1	PDGA_MOUSE	P34007 oryctolagus
27	102.5	9.7	213	1	PDGA_RABIT	P22762 m glycoprot
28	95	9.0	120	1	GLHA_MACMU	P53542 clarias gar
29	86	8.2	116	1	GLHA_CLAGA	P80665 s glycoprot
30	85.5	8.1	96	1	GLHA_STRCA	P30983 ctenopharyn
31	85.5	8.1	118	1	GLHA_CYLID	P37037 hypophthalm
32	85.5	8.1	118	1	GLHA_HYPMO	Q9yqp3 ictalurus p
33	85	8.1	116	1	GLHA_ICTPU	P01221 cyprinus ca
34	84.5	8.0	118	1	GLH1_CYPCA	P18857 cyprinus ca
35	84.5	8.0	118	1	GLH2_CYPCA	P37045 m glycoprot
36	83.5	7.9	120	1	GLHA_MELGA	P15625 saccharomyc
37	83.5	7.9	502	1	SYFA_YEAST	P12487 human immun
38	83.5	7.9	853	1	ENV_HV1Z2	P35728 saccharomyc
39	80.5	7.6	441	1	YKF9_YEAST	P01218 o glycoprot
40	78.5	7.5	120	1	GLHA_SHEEP	P01220 e glycoprot
41	78	7.4	120	1	GLHA_HORSE	P12836 muraenesox
42	77	7.3	93	1	GLHA_MURCI	P01217 b glycoprot
43	77	7.3	120	1	GLHA_BOVIN	P31327 homo sapien
44	75.5	7.2	1500	1	CPSM_HUMAN	Q46803 escherichia
45	75	7.1	363	1	YCEW_ECOLI	

ALIGNMENTS

```
RESULT 1
VEGC_HUMAN
ID   VEGC_HUMAN      STANDARD;      PRT:   419 AA.
AC   P49767;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE   ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
DE   L).
GN   VEGFC.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.
RX   MEDLINE=96178224; PubMed=8617204;
RA   Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA   Saksela O., Kalkkinen N., Alitalo K.;
RT   "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
RT   the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL   EMBO J. 15:290-298(1996).
RN   [2]
RP   ERRATUM.
RX   MEDLINE=96203094; PubMed=8612600;
RA   Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA   Saksela O., Kalkkinen N., Alitalo K.;
RL   EMBO J. 15:1751-1751(1996).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96312526; PubMed=8700872;
RA   Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;
RT   "Vascular endothelial growth factor-related protein: a ligand and
RT   specific activator of the tyrosine kinase receptor Flt4.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN   [4]
RP   SEQUENCE FROM N.A.
RA   Fitz L., Morris J.C., Towler P.S., Long A.J., Greco R.,
RA   Burgess P., Giannotti J., Ciarletta A., Hennessey D., Kovacic S.,
RA   Fitzgerald M., Scaltreto H., Welch N., Neben S., Finnerty H.,
RA   Zollner R., Wang J., Nickbarg E., Gassaway R., Turner K.,
RA   Wood C.R.;
RL   Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; X94216; CAA63907.1; -.
DR   EMBL; U43142; AAA85214.1; -.
DR   EMBL; U58111; AAB02909.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601528; -.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PROPEP        ?    102       POTENTIAL.
FT   CHAIN       103    419       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      275    365       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      275    298       1.
FT   REPEAT      299    322       2.
FT   REPEAT      323    346       3.
FT   REPEAT      347    365       4 (PARTIAL).
FT   CARBOHYD    175    175       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    205    205       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    240    240       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   419 AA;  46883 MW;  9F598719DB3E014F CRC64;

  Query Match             100.0%;  Score 1053;  DB 1;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 6.4e-95;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         32 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 91

Qy         61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         92 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 151

Qy        121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy        181 MSKLDVYRQVHSIIRR 196
              ||||||||||||||||
Db        212 MSKLDVYRQVHSIIRR 227


RESULT 2
VEGC_MOUSE
ID   VEGC_MOUSE     STANDARD;      PRT;   415 AA.
AC   P97953;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND)
DE   (FLT4-L).
GN   VEGFC.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97164697; PubMed=9012504;
RA   Kukk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA   Joukov V., Alitalo K.;
RT   "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT   suggests a role in lymphatic vascular development.";
RL   Development 122:3829-3837(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97388482; PubMed=9247316;
RA   Fitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
RA   Wang J., Gassaway R., Nickbarg E., Kovacic S., Ciarletta A.,
RA   Giannotti J., Finnerty H., Zollner R., Beier D.R., Leak L.V.,
RA   Turner K.J., Wood C.R.;
RT   "Characterization of murine Flt4 ligand/VEGF-C.";
RL   Oncogene 15:613-618(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/[illegible]
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U73620; AAC52984.1; -.
DR   EMBL; U58112; AAB46707.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:109124; Vegfc.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PROPEP        ?     98       POTENTIAL.
FT   CHAIN        99    415       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      271    361       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      271    294       1.
FT   REPEAT      295    318       2.
FT   REPEAT      319    342       3.
FT   REPEAT      343    361       4 (PARTIAL).
FT   CARBOHYD    171    171       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    201    201       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    236    236       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   415 AA;  46471 MW;  D9D3DD3CECC659D6 CRC64;

  Query Match             88.4%;  Score 931;  DB 1;  Length 415;
  Best Local Similarity   87.8%;  Pred. No. 4.6e-83;
  Matches  172;  Conservative    8;  Mismatches   12;  Indels    4;  Gaps    1;

Qy          1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
              |||||  |:||||  ||    |:   ||||||||||||||||:||||:||||||||||||||
Db         32 FESGLGFSEAEPDGGEVKAFEGKDLEEQLRSVSSVDELMSVLYPDYWKMYKCQLRKGGWQ 91

Qy         61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
                  |   ||:||  :::|||||||||||||||||||||||||||||||||||| |||||
Db         92 ----QPILNTRICDSVKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGAATNTF 147

Qy        121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
              ||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||
Db        148 FKPPCVSVYRCGGCCNSEGLQCMNTSTGYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 207

Qy        181 MSKLDVYRQVHSIIRR 196
              ||||||||||||||||
Db        208 MSKLDVYRQVHSIIRR 223


RESULT 3
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VEGF_HUMAN
ID   VEGF_HUMAN      STANDARD;      PRT:   215 AA
AC   P15692;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF OR VEGFA.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=90069608; PubMed=2479986;
RA   Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT   "Vascular endothelial growth factor is a secreted angiogenic
RT   mitogen.";
RL   Science 246:1306-1309(1989).
RN   [2]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RX   MEDLINE=90069609; PubMed=2479987;
RA   Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J.,
RA   Connolly D.T.;
RT   "Vascular permeability factor, an endothelial cell mitogen related to
RT   PDGF.";
RL   Science 246:1309-1312(1989).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=91268072; PubMed=1711045;
RA   Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D.,
RA   Fiddes J.C., Abraham J.A.;
RT   "The human gene for vascular endothelial growth factor. Multiple
RT   protein forms are encoded through alternative exon splicing.";
RL   J. Biol. Chem. 266:11947-11954(1991).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92231879; PubMed=1567395;
RA   Weindel K., Marme D., Weich H.A.;
RT   "AIDS-associated Kaposi's sarcoma cells in culture express vascular
RT   endothelial growth factor.";
RL   Biochem. Biophys. Res. Commun. 183:1167-1174(1992).
RN   [5]
RP   PRELIMINARY SEQUENCE OF 27-46; 43-50 AND 59-81.
RX   MEDLINE=90062112; PubMed=2584205;
RA   Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,
RA   Siegel N., Haymore B.L., Leimgruber R., Feder J.;
RT   "Human vascular permeability factor. Isolation from U937 cells.";
RL   J. Biol. Chem. 264:20017-20024(1989).
RN   [6]
RP   SEQUENCE OF 27-41.
RX   MEDLINE=93145946; PubMed=7678805;
RA   Siebich B.L., Jaeger B., Schoellmann C., Weindel K., Wilting J.,
RA   Kochs G., Marme D., Rug H., Weich H.A.;
RT   "Synthesis and assembly of functionally active human vascular
RT   endothelial growth factor homodimers in insect cells.";
RL   Eur. J. Biochem. 211:19-26(1993).
RN   [7]
RP   X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
RX   MEDLINE=97352774; PubMed=9207067;
RA   Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
RA   de Vos A.M.;
RT   "Vascular endothelial growth factor: crystal structure and functional
RT   mapping of the kinase domain receptor binding site.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
RN   [8]
RP   X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
RX   MEDLINE=98045455; PubMed=9351807;
RA   Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
RT   "The crystal structure of vascular endothelial growth factor (VEGF)
RT   refined to 1.93-A resolution: multiple copy flexibility and receptor
RT   binding.";
RL   Structure 5:1325-1338(1997).
RN   [9]
RP   X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.
RX   MEDLINE=99119204; PubMed=9922142;
RA   Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,
RA   Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;
RT   "Crystal structure of the complex between VEGF and a receptor-blocking
RT   peptide.";
RL   Biochemistry 37:17765-17772(1998).
RN   [10]
RP   STRUCTURE BY NMR OF 34-135.
RX   MEDLINE=97477915; PubMed=9336848;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "1H, 13C, and 15N backbone assignment and secondary structure of the
RT   receptor-binding domain of vascular endothelial growth factor.";
RL   Protein Sci. 6:2250-2260(1997).
RN   [11]
RP   STRUCTURE BY NMR OF 137-215.
RX   MEDLINE=98298440; PubMed=9634701;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "Solution structure of the heparin-binding domain of vascular
RT   endothelial growth factor.";
RL   Structure 6:637-648(1998).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: FOUR FORMS OF VEGF ARE PRODUCED BY
CC       ALTERNATIVE SPLICING OF THE SAME GENE (VEGF 121, VEGF-165,
CC       VEGF-189 AND VEGF-215).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M32977; AAA35789.1; -.
DR   EMBL; M27281; AAA36807.1; -.
DR   EMBL; M63978; AAA36804.1; -.
DR   EMBL; M63971; AAA36804.1; JOINED.
DR   EMBL; M63972; AAA36804.1; JOINED.
DR   EMBL; M63973; AAA36804.1; JOINED.
DR   EMBL; M63974; AAA36804.1; JOINED.
DR   EMBL; M63975; AAA36804.1; JOINED.
DR   EMBL; M63976; AAA36804.1; JOINED.
DR   EMBL; M63977; AAA36804.1; JOINED.
DR   EMBL; X62568; CAA44447.1; -.
DR   PIR; A34492; A34492.
DR   PIR; A40079; A40079.
DR   PIR; A40080; A40080.
DR   PIR; A40454; A40454.
DR   PIR; B40454; B40454.
DR   PIR; C40454; C40454.
DR   PIR; JQ1463; JQ1463.
DR   PIR; JQ1464; JQ1464.
DR   PIR; S17348; S17348.
DR   PDB; 1VGH; 08-APR-98.
DR   PDB; 2VGH; 08-APR-98.
DR   PDB; 1VPF; 08-APR-98.
DR   PDB; 2VPF; 29-JUL-98.
DR   PDB; 1VPP; 23-FEB-99.
DR   MIM; 192240; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
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DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal;
KW   3D-structure.
FT   SIGNAL          1     26
FT   CHAIN          27    215       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID       52     94
FT   DISULFID       83    128
FT   DISULFID       87    130
FT   DISULFID       77     77       INTERCHAIN.
FT   DISULFID       86     86       INTERCHAIN.
FT   CARBOHYD      101    101       N-LINKED (GLCNAC...).
FT   VARSPLIC      141    141       K -> N (IN ISOFORM VEGF-121 AND ISOFORM
FT                                  VEGF 165).
FT   VARSPLIC      142    165       MISSING (IN ISOFORM VEGF-165).
FT   VARSPLIC      142    209       MISSING (IN ISOFORM VEGF-121).
SQ   SEQUENCE   215 AA;  25173 MW;  7B9759AD5871FF33 CRC64;


  Query Match             18.5%;  Score 195;  DB 1;  Length 215;
  Best Local Similarity   28.5%;  Pred. No. 7.4e-12;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;

Qy      48 LMIVLYIFLYWEMYRQQLRRECGWQHNREQANLNSRIEELIKFEAAARYNIELLKSTDNEWRK 97
           |:  |:   |          ||  |:            | :||               : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM------ ------DVYQR 49

Qy      98 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 157
           : | |  :|: :|:       ||| || : ||||||| |||:|: |  | :: :  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     158 IVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIR 195
           ||     :||  |  | | | | ||    :|
Db     110 KP  HQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVR 145


RESULT   4
VEGF_PIG
ID   VEGF_PIG       STANDARD;      PRT;   190 AA.
AC   P49151;
DT   01-FEB-1996 (Rel. 33, Created)
DT   01-FEB-1996 (Rel. 33, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID=9823;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=95133284; PubMed=7841293;
RA   Sharma H.S., Tanq Z.H., Gho B.C.H., Verdouw P.D.;
RT   "Nucleotide sequence and expression of the porcine vascular
RT   endothelial growth factor.";
RL   Biochim. Biophys. Acta 1260:235-238(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY (BY SIMILARITY).
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE LINKED (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC   ---------- ---------- ---------- ---------- ---------- ---------- ----
DR   EMBL; X81480; CAA57143.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL          1     26       POTENTIAL.
FT   CHAIN          27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID       51     93       BY SIMILARITY.
FT   DISULFID       82    127       BY SIMILARITY.
FT   DISULFID       86    129       BY SIMILARITY.
FT   DISULFID       76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID       85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD      100    100       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   190 AA;  22368 MW;  04D40B8D7913047F CRC64;


  Query Match             17.9%;  Score 188.5;  DB 1;  Length 190;
  Best Local Similarity   29.8%;  Pred. No. 2.7e-11;
  Matches   42;  Conservative   18;  Mismatches   56;  Indels   25;  Gaps    3;

Qy      54 LRKGGWQHNREQANLNSRIEELIKFEAAARYNIELLKSTDNEWRKTQCMPREVCIDVGKEF 113
           |    |       |  : :  | :||               : :::: | | |  :|: :|:
Db      18 LHHAKWSQAAPMAEGDQKPHEVVKFM------------DVYQRSYCRPIETLVDIFQEY 64

Qy     114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIIVPL-----SQGPKPV 168
           ||| || : |||||||| |||:| |          | ||: :       ||
Db      65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE- --- -FNIIMQIMRIKPHQGQHIG 117

Qy     169 TISFANHTSCRCMSKLDVYRQ 189
           :|| |  | | |  | |  ||
Db     118 EMSFLQHNKCECRPKKDRARQ 138


RESULT   5
VEGF_BOVIN
ID   VEGF_BOVIN      STANDARD;      PRT;   190 AA.
AC   P15691;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
RX   MEDLINE=90069608; PubMed=2479986;
RA   Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT   "Vascular endothelial growth factor is a secreted angiogenic
RT   mitogen.";
RL   Science 246:1306-1309(1989).
RN   [2]
RP   SEQUENCE OF 27-190 FROM N.A.
RX   MEDLINE=90121225; PubMed=2610687;
RA   Fischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
RA   Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
RT   "Vascular endothelial growth factor: a new member of the platelet
RT   derived growth factor gene family.";
RL   Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
RN   [3]
RP   SEQUENCE OF 27-31.
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RX   MEDLINE=89286596; PubMed=2735925;
RA   Ferrara N., Henzel W.J.;
RT   "Pituitary follicular cells secrete a novel heparin binding growth
RT   factor specific for vascular endothelial cells.";
RL   Biochem. Biophys. Res. Commun. 161:851-858(1989).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   --------------------------------------------------------------------------
DR   EMBL; M32976; AAA30502.1; -.
DR   EMBL; M31836; AAA30804.1; -.
DR   EMBL; M33750; AAA30805.1; -.
DR   PIR; A33255; A33255.
DR   PIR; A33787; A33787.
DR   PIR; B40080; B40080.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   VARSPLIC    139    183       MISSING (IN ISOFORM BETA).
FT   VARSPLIC    184    184       R -> K (IN ISOFORM BETA).
SQ   SEQUENCE   190 AA;  22310 MW;  EDBF903E46E24789 CRC64;

  Query Match             16.7%;  Score 175.5;  DB 1;  Length 190;
  Best Local Similarity   29.0%;  Pred. No. 5e-10;
  Matches   40;  Conservative   18;  Mismatches   61;  Indels   19;  Gaps    3;

Qy         54 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
Db         18 LHHAKWSQAAPMAEGGQKPHEVVKFM-------------DVYQRSFCRPIETLVDIFQEY 64

Qy        114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
Db         65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMS 120

Qy        172 FANHTSCRCMSKLDVYRQ 189
Db        121 FLQHNKCECRPKKDKARQ 138

RESULT 6
VEGF_SHEEP
ID   VEGF_SHEEP     STANDARD;      PRT;   146 AA.
AC   P50412;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Ovis aries (Sheep).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Caprinae; Ovis.
OX   NCBI_TaxID=9940;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Kidney;
RX   MEDLINE=97117958; PubMed=8958842;
RA   Redmer D.A., Dai Y., Li J., Charnock-Jones D.S., Smith S.K.,
RA   Reynolds L.P., Moor R.M.;
RT   "Characterization and expression of vascular endothelial growth
RT   factor (VEGF) in the ovine corpus luteum.";
RL   J. Reprod. Fertil. 108:157-165(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   modified and this statement is not removed.  Usage  by  and for commercial
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; X89506; CAA61677.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    146       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   146 AA;  17247 MW;  4E792CB557F91760 CRC64;

  Query Match             16.5%;  Score 173.5;  DB 1;  Length 146;
  Best Local Similarity   29.0%;  Pred. No. 5.8e-10;
  Matches   40;  Conservative   18;  Mismatches   61;  Indels   19;  Gaps    3;

Qy         54 LRKGGWQHNREQANLNSRTEETIKFAAAHYNIEILKSIDNEWRKTQCMPREVCIDVGKEF 113
Db         18 LHHAKWSQAAPMAEGGQKPHEVMKFM-------------DVYQRSFCRPIETLVDIFQEY 64

Qy        114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
Db         65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMS 120

Qy        172 FANHTSCRCMSKLDVYRQ 189
Db        121 FLQHNKCECRPKKDKARQ 138

RESULT 7
VEGF_MOUSE
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ID   VEGF_MOUSE     STANDARD;      PRT:   214 AA.
AC   Q00731;
DT   01-APR-1993 (Rel. 25, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92274860; PubMed=1592003;
RA   Breier G., Albrecht U., Sterrer S., Risau W.;
RT   "Expression of vascular endothelial growth factor during embryonic
RT   angiogenesis and endothelial cell differentiation.";
RL   Development 114:521-532(1992).
RN   [2]
RP   SEQUENCE FROM N.A. (VEGF 1).
RX   MEDLINE=92355593; PubMed=1644816;
RA   Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT   "Vascular endothelial growth factor. Regulation by cell
RT   differentiation and activated second messenger pathways.";
RL   J. Biol. Chem. 267:16317-16322(1992).
RN   [3]
RP   SEQUENCE OF 1-8 FROM N.A.
RX   MEDLINE=96216498; PubMed=8632007;
RA   Shima D.T., Kuroki M., Deutsch U., Ng Y., Adamis A.P., D'Amore P.A.;
RT   "The mouse gene for vascular endothelial growth factor. Genomic
RT   structure, definition of the transcriptional unit, and
RT   characterization of transcriptional and post-transcriptional
RT   regulatory sequences.";
RL   J. Biol. Chem. 271:3877-3883(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE LINKED.
CC   -!- SUBCELLULAR LOCATION: VEGF 1 AND VEGF 2 ARE SECRETED WHILE
CC       VEGF 3 REMAINS CELL SURFACE ASSOCIATED UNLESS RELEASED BY
CC       HEPARIN.
CC   -!- ALTERNATIVE PRODUCTS: THREE FORMS (VEGF 1, VEGF 2 AND VEGF 3) ARE
CC       PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME GENE. THE
CC       LONGEST FORM (VEGF 3, SHOWN HERE) CONTAINS A BASIC INSERT LINKED
CC       TO CELL ASSOCIATION/HEPARIN BINDING.
CC   -!- TISSUE SPECIFICITY: IN DEVELOPING EMBRYOS, EXPRESSED MAINLY IN
CC       THE CHOROID PLEXUS, PARAVENTRICULAR NEUROEPITHELIUM, PLACENTA AND
CC       KIDNEY GLOMERULI. ALSO FOUND IN BRONCHIAL EPITHELIUM, ADRENAL
CC       GLAND AND IN SEMINIFEROUS TUBULES OF TESTIS. HIGH EXPRESSION OF
CC       VEGF CONTINUES IN KIDNEY GLOMERULI AND CHOROID PLEXUS IN ADULTS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
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CC   or send an email to license@isb-sib.ch).
CC   ---------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
DR   EMBL; S67052; AAB22252.1; -.
DR   EMBL; S68083; AAB22253.1; -.
DR   EMBL; S68100; AAB22254.1; -.
DR   EMBL; M95200; AAA40547.1; -.
DR   EMBL; U41383; -; Not_ANNOTATED_CDS.
DR   PIR; A43351; A43351.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:103178; Vegf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC...) (PROBABLE).
FT   VARSPLIC    140    140       K -> N (IN ISOFORM VEGF-1).
FT   VARSPLIC    141    164       MISSING (IN ISOFORM VEGF-1).
FT   VARSPLIC    141    208       MISSING (IN ISOFORM VEGF-2).
FT   CONFLICT    117    118       GE -> ER (IN REF. 2).
SQ   SEQUENCE   214 AA;  25283 MW;  B554085E4B86E17 CRC64;


  Query Match             16.5%;  Score 173.5;  DB 1;  Length 214;
  Best Local Similarity   29.1%;  Pred. No. 9e-10;
  Matches   49;  Conservative   19;  Mismatches   57;  Indels   19;  Gaps    3;

Qy      54 IRKQCVPIRNKEQANESVTEELIKFAAAHYNTEILKSIDNEWKKTQCMPREVCIDVGKEF 113
           |   |           :: | |||                 : :::: | | |  :|: :|:
Db      18 LHHAKWSQAAPITPEGQKSHEVIKFM ---- --  -- DVYQRSYCRPIETLVDIFQEY 64

Qy     114 GVAINIFEKPPCVSVYRQGCCNSEGLQCMNTSISYLSKILEETTVPLSQ GPKPVTIS 171
           ||| :| : || |||| | |:|: :  :  |    ||  |      ::
Db      65 PDETEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG - EMS 120

Qy     172 FANHTSCRCMSKLD 185
           |  |: | |  | |
Db     121 FIQHSRCECRPKKD 134


RESULT    8
VEGF_CAVPO
ID   VEGF_CAVPO     STANDARD;      PRT:   164 AA.
AC   P26617;
DT   01-AUG-1992 (Rel. 23, Created)
DT   01-AUG-1992 (Rel. 23, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) (VASCULAR PERMEABILITY
DE   FACTOR) (VPF).
GN   VEGF.
OS   Cavia porcellus (Guinea pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX   NCBI_TaxID=10141;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Berse B.;
RL   Submitted (XXX-1992) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
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CC   or send an email to license@isb-sib.ch).
CC   ---------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----
DR   EMBL; M84230; AAA37057.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
```

```
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein.
FT   DISULFID     25     67       BY SIMILARITY.
FT   DISULFID     56    101       BY SIMILARITY.
FT   DISULFID     60    103       BY SIMILARITY.
FT   DISULFID     50     50       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     50     59       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     59     59       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD     74     74
SQ   SEQUENCE   164 AA;  19330 MW;  9EB86A81A9D5DCA4 CRC64;


  Query Match             16.4%;  Score 172.5;  DB 1;  Length 164;
  Best Local Similarity   29.8%;  Pred. No. 8.3e-10;
  Matches   37;  Conservative   20;  Mismatches   42;  Indels   25;  Gaps    3;

Qy      71 RTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYR 130
           :  | :||                 : :::: | | |: :|: :|:          ||| || : |
Db       9 KPREEVKFM-------------DVYKRSYCRPIEMLVDIFQEYPDEIEYIFKPSCVPLMR 55

Qy     131 CGGCCNSEGLQCMNTSTSYLSKTLFEITVPL-----SQGPKPVTISFANHTSCRCMSKLD 185
           |||||| | |:|: |          | ||: :      ||       :|| |: | | | : :
Db      56 CGGCCNDESLECVPTEE-------ENITMQIMRIKPHQGQHIGEMSFLQHSKCECRPKKE 108

Qy     186 VYRQ 189
             ||
Db     109 KARQ 112


RESULT   9
VEGF_RAT
ID   VEGF_RAT        STANDARD;       PRT;   190 AA.
AC   P16612;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-190.
RX   MEDLINE; 90207240; PubMed=2320579;
RA   Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA   Palisi T.M., Hope D.A., Thomas K.A.;
RT   "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
RT   that is homologous to platelet-derived growth factor.";
RL   Proc. Natl. Acad. Sci. U.S.A. 87:2628-2632(1990).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY)
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN THE PITUITARY, IN BRAIN, IN
CC       PARTICULARLY IN SUPRAOPTIC AND PARAVENTRICULAR NUCLEI AND THE
CC       CHOROID PLEXUS. ALSO FOUND ABUNDANTLY IN THE CORPUS LUTEUM OF
CC       THE OVARY AND IN KIDNEY GLOMERULI.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   ---------------------------------------------------------------------
DR   EMBL; M32167; AAA41211.1; -.
DR   PIR; A35987; A35987.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL       1     26
FT   CHAIN       27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .).
SQ   SEQUENCE   190 AA;  22396 MW;  5893740104A1F377 CRC64;


  Query Match             16.4%;  Score 172.5;  DB 1;  Length 190;
  Best Local Similarity   33.1%;  Pred. No. 9.8e-10;
  Matches   42;  Conservative   22;  Mismatches   50;  Indels   13;  Gaps    5;

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWPKTQCMPREVCIDVGKEFGVATNTF 120
           |: : :     ||   |  ||    |:::| :|  :::: | | |  :|: :|:
Db      19 HHAKWSQAAPTTEGEQK---AH---EVVKFMD-VYQRSYCRPIETLVDIFQEYPDEIEYI 71

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTISFANHTSC 178
           ||| || : || |||| | |:|: || | ::  :  |    ||  |     :|| |: | |
Db      72 FKPSCVPLMRCAGCCNDEALECVPTSESNVTMQIMRIKPHQSQHIG----EMSFLQHSRC 127

Qy     179 RCMSKLD 185
           |  | |
Db     128 ECRPKKD 134


RESULT  10
VEGH_ORFN2
ID   VEGH_ORFN2      STANDARD;       PRT;   133 AA.
AC   P52584;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR HOMOLOG PRECURSOR.
GN   A2R
OS   Orf virus (Strain NZ2) (OV NZ 2).
OC   Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
OC   Parapoxvirus.
OX   NCBI_TaxID=10259;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE; 94076469; PubMed=8254780;
RA   Lyttle D.J., Fraser K.M., Fleming S.B., Mercer A.A., Robinson A.J.;
RT   "Homologs of vascular endothelial growth factor are encoded by the
RT   poxvirus orf virus.";
RL   J. Virol. 68:84-92(1994).
CC   -!- FUNCTION: INDUCES ENDOTHELIAL PROLIFERATION.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; S67520; AAB29220.2; -.
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DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1      ?       POTENTIAL.
FT   CHAIN         ?    133       VASCULAR ENDOTHELIAL GROWTH FACTOR
FT                                HOMOLOG.
FT   DISULFID     36     78       BY SIMILARITY.
FT   DISULFID     67    112       BY SIMILARITY.
FT   DISULFID     71    114       BY SIMILARITY.
FT   DISULFID     61     61       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     70     70       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     85     85       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   133 AA;  14715 MW;  9172CF688303073D CRC64;

  Query Match             15.4%;  Score 162.5;  DB 1;  Length 133;
  Best Local Similarity   34.4%;  Pred. No. 6.1e-09;
  Matches   33;  Conservative   16;  Mismatches   38;  Indels    9;  Gaps    2;

Qy         85 FEILKSIDNEWRKTQCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMN 144
              :|:||          ::| || : : | :       |:  | ||||:: |||||| | |:|:
Db         28 SEVLKG---------SECKPRPIVVPVSETHPELTSQRFNPPCVTLMRCGGCCNDESLECVP 80

Qy        145 TSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
              |    :|  |  :   | | :   :||  |  | |
Db         81 TEEVNVSMELLGASGSGSNGMQ-RLSFVEHKKCDC 114


RESULT 11
VEGH_ORFN7
ID   VEGH_ORFN7     STANDARD;      PRT;   148 AA.
AC   P52585;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR HOMOLOG PRECURSOR.
GN   A2R.
OS   Orf virus (strain NZ7) (OV NZ-7).
OC   Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
OC   Parapoxvirus.
OX   NCBI_TaxID=73495;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94076465; PubMed=8254780;
RA   Lyttle D.J., Fraser K.M., Fleming S.B., Mercer A.A., Robinson A.J.;
RT   "Homologs of vascular endothelial growth factor are encoded by the
RT   poxvirus orf virus.";
RL   J. Virol. 68:84-92(1994).
CC   -!- FUNCTION: INDUCES ENDOTHELIAL PROLIFERATION.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   use  by  non-profit  institutions as long  as its content  is  in  no  way
CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; S67522; AAB29223.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; FALSE_NEG.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1      ?       POTENTIAL.
FT   CHAIN         ?    148       VASCULAR ENDOTHELIAL GROWTH FACTOR
FT                                HOMOLOG.
FT   DISULFID     46     88       BY SIMILARITY.
FT   DISULFID     77    130       BY SIMILARITY.
FT   DISULFID     81    132       BY SIMILARITY.
FT   DISULFID     71     71       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     80     80       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     95     95       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   148 AA;  16078 MW;  F0E13BA104CC73F8 CRC64;

  Query Match             15.2%;  Score 160;  DB 1;  Length 148;
  Best Local Similarity   32.7%;  Pred. No. 1.2e-08;
  Matches   33;  Conservative   15;  Mismatches   43;  Indels   10;  Gaps    2;

Qy         93 NEWRKT------QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTS 148
              |:| :|      | ||:  : :|:|:  :||  : | ||:| || |||| :|  |    |
Db         35 NDWMRTLDKSGCKPRDTVVYLGEEYPESTNLQYNPRCVTVKRCSGCCNGDGQTCTAVETR 94

Qy        149 YLSKTLFEITVPLSQGPKP--------VTISFANHTSCRCMSK 183
               : |:   |  | |            ||   || | |: :
Db         95 NTTVTVSVTGVSSSSGTNSGVSTNLQRTSVTEHTKCDCIGR 135


RESULT 12
PLGF_HUMAN
ID   PLGF_HUMAN     STANDARD;      PRT;   170 AA.
AC   P49763;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   PLACENTA GROWTH FACTOR PRECURSOR (PLGF-1/PLGF-2).
GN   PGF OR PLGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (PLGF-1).
RC   TISSUE=Placenta;
RX   MEDLINE=92021031; PubMed=1924389;
RA   Maglione D., Guerriero V., Viglietto G., Delli-Bovi P., Persico M.G.;
RT   "Isolation of a human placenta cDNA coding for a protein related to
RT   the vascular permeability factor.";
RL   Proc. Natl. Acad. Sci. U.S.A. 88:9267-9271(1991).
RN   [2]
RP   SEQUENCE FROM N.A. (PLGF-2).
RC   TISSUE=Placenta;
RX   MEDLINE=94198032; PubMed=8148155;
RA   Hauser S., Weich H.A.;
RT   "A heparin-binding form of placenta growth factor (PlGF-2) is
RT   expressed in human umbilical vein endothelial cells and in
RT   placenta.";
RL   Growth Factors 9:259-268(1993).
RN   [3]
RP   SEQUENCE FROM N.A. (PLGF-2).
RX   MEDLINE=93205407; PubMed=7681160;
RA   Maglione D., Guerriero V., Viglietto G., Ferraro M.G., Aprelikova O.,
RA   Alitalo K., del Vecchio S., Lei K.-J., Chou J.Y., Persico M.G.;
RT   "Two alternative mRNAs coding for the angiogenic factor, placenta
RT   growth factor (PlGF), are transcribed from a single gene of
RT   chromosome 14.";
RL   Oncogene 8:925-931(1993).
RN   [4]
RP   CHARACTERIZATION, AND SEQUENCE OF 19-24.
RX   MEDLINE=95014370; PubMed=7929268;
RA   Park J.E., Chen H.H., Winer J., Houck K.A., Ferrara N.;
RT   "Placenta growth factor. Potentiation of vascular endothelial growth
RT   factor bioactivity, in vitro and in vivo, and high affinity binding
RT   to Flt-1 but not to Flk-1/KDR.";
RL   J. Biol. Chem. 269:25646-25654(1994).
```

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CC   -!- FUNCTION: GROWTH FACTOR OF UNKNOWN FUNCTION. BINDS TO RECEPTOR
CC       VEGFR-1 (FLT1). THE LONGER FORM (PLGF-2) CAN ALSO BIND HEPARIN. IT
CC       IS ABLE TO POTENTIATE THE ACTION OF LOW LEVELS OF VEGF.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: BOTH FORMS ARE SECRETED BUT THE LONGER FORM
CC       APPEARS TO REMAIN CELL ATTACHED UNLESS RELEASED BY HEPARIN.
CC   -!- ALTERNATIVE PRODUCTS: 2 ISOFORMS; PLGF-1 AND PLGF-2 (SHOWN HERE);
CC       ARE PRODUCED BY ALTERNATIVE SPLICING. PLGF-1 DIFFERS FROM PLGF-2
CC       IN LACKING A 21 RESIDUES SEGMENT IN THE C-TERMINAL SECTION WHICH
CC       ACTS AS A CELL RETENTION SIGNAL.
CC   -!- TISSUE SPECIFICITY: WHILE BOTH FORMS ARE PRESENT IN MOST PLACENTAL
CC       TISSUES, THE LONGER FORM IS SPECIFIC TO EARLY (8 WEEK) PLACENTA
CC       AND ONLY THE SHORTER FORM IS FOUND IN THE COLON AND MAMMARY
CC       CARCINOMAS.
CC   -!- PTM: N-GLYCOSYLATED.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X54936; CAA38698.1; -.
DR   EMBL; A18411; CAA01393.1; -.
DR   EMBL; S72960; AAB30462.2; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601121; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Alternative splicing;
KW   Heparin binding.
FT   SIGNAL        1     18
FT   CHAIN        19    170       PLACENTA GROWTH FACTOR.
FT   DISULFID     52     94       BY SIMILARITY.
FT   DISULFID     83    128       BY SIMILARITY.
FT   DISULFID     87    130       BY SIMILARITY.
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     86     86       N-LINKED (GLCNAC. ...) (POTENTIAL).
FT   CARBOHYD     33     33       N-LINKED (GLCNAC. ...) (POTENTIAL).
FT   CARBOHYD    101    101       MISSING (IN ISOFORM PLGF-1).
FT   VARSPLIC    142    162       D -> N (IN REF. 1).
FT   CONFLICT     91     91
SQ   SEQUENCE   170 AA;  19325 MW;  E47649AC59C0963F CRC64;

  Query Match          14.2%;  Score 150;  DB 1;  Length 170;
  Best Local Similarity  33.0%;  Pred. No. 1.3e-07;
  Matches  29;  Conservative  14;  Mismatches  39;  Indels  6;  Gaps  2;

Qy      95 WRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTL 154
           | :: |   |  :|| |:       | | ||| || ||| | | |:  |: :: |
Db      47 WGRSYCRALERLVDVVSEYPSEVEHMFSPSCVSLLRCTGCCGDEDLHCVPVETANVTMQL 106

Qy     155 FEITVPLSQGPKP--VTISFANHTSCRC 180
             :|     | :|  | ::|: |  | |
Db     107 LKI----RSGDRPSYVELTFSQHVRCEC 130


RESULT  13
VEGF_CHICK
ID   VEGF_CHICK     STANDARD;      PRT;   216 AA.
AC   P52582; Q91420;
DT   01-OCT-1996 (Rel. 34, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Gallus gallus (Chicken), and
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031, 93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Chicken; TISSUE=Heart;
RA   Takahashi T.;
RL   Submitted (FEB-1996) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   SPECIES=C.c.japonica; TISSUE=Embryo;
RX   MEDLINE=96005007; PubMed=7556923;
RA   Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;
RT   "Overexpression of vascular endothelial growth factor in the avian
RT   embryo induces hypervascularization and increased vascular
RT   permeability without alterations of embryonic pattern formation.";
RL   Dev. Biol. 171:399-414(1995).
RN   [3]
RP   SEQUENCE OF 60-187 FROM N.A.
RC   SPECIES=C.c.japonica;
RX   MEDLINE=95301109; PubMed=7781909;
RA   Flamme I., Breier G., Risau W.;
RT   "Vascular endothelial growth factor (VEGF) and VEGF receptor 2
RT   (flk-1) are expressed during vasculogenesis and vascular
RT   differentiation in the quail embryo.";
RL   Dev. Biol. 169:699-712(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: THREE ISOFORMS (VEGF-190, VEGF-146 AND VEGF-
CC       166) ARE PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME
CC       GENE. THE LONGER FORM CONTAINS A BASIC INSERT WHICH ACTS AS A CELL
CC       RETENTION SIGNAL.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY AND EQUALLY EXPRESSED IN HEART AND
CC       LIVER. IN KIDNEY GLOMERULI, BRAIN AND YOLK SAC, VEGF-166 FORM IS
CC       5- TO 10- TIMES MORE ABUNDANT THAN THE VEGF-190 FORM.
CC   -!- DEVELOPMENTAL STAGE: THE VEGF-166 FORM IS EXPRESSED EARLY AT DAY 1
CC       AND IS UPGRADED DURING GASTRULATION. EXPRESSION OF THE VEGF-190
CC       FORM IS DETECTABLE ONLY FROM DAY 2.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AB011078; BAA24925.1; -.
DR   EMBL; S79680; AAB35371.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    216       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     83    128       BY SIMILARITY.
FT   DISULFID     87    130       BY SIMILARITY.
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     86     86       N-LINKED (GLCNAC. ...) (POTENTIAL).
FT   CARBOHYD    101    101
FT   VARSPLIC    142    142       K -> N (IN ISOFORM VEGF-166).
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FT   VARSPLIC    143    166       MISSING (IN ISOFORM VEGF 166).
FT   VARSPLIC    166    166       F -> L (IN ISOFORM VEGF 146).
FT   VARSPLIC    167    210       MISSING (IN ISOFORM VEGF-146).
SQ   SEQUENCE   216 AA;  25203 MW;  82E669C2F6FC6DA7 CRC64;

  Query Match             14.2%;  Score 150;  DB 1;  Length 216;
  Best Local Similarity   26.8%;  Pred. No. 1.8e-07;
  Matches   37;  Conservative   25;  Mismatches   58;  Indels   18;  Gaps    4;

Qy         59 WQHNREQANLNSRTEETIKFAAA       HYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 113
              | |      | |   :: |  | | |            |::| ::   : :: |     |   :|: :|:
Db          7 WIHWGLAALLYLQSAELSKAAPALGDGERKPNEVIKFLE-VYERSFCRTIETLVDIFQEY 65

Qy        114 GVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLS   ---QGPKPV 168
                       |:| || : || |||  |||:|:              :: :|: ::     |
Db         66 PDEVEYIFRPSCVPLMRCAGCCGDEGLECVPVD-     --VYNVTMEIARIKPHQSQHIA 118

Qy        169 TISFANHTSCRCMSKLDV 186
                :||  |: |  |   | ||
Db        119 HMSFLQHSKCDCRPKKDV 136


RESULT 14
VEGB_MOUSE
ID   VEGB_MOUSE     STANDARD;      PRT;   188 AA.
AC   P49766;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VASCULAR
DE   ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRF).
GN   VEGFB OR VRF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID 10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE Heart;
RX   MEDLINE 96197355; PubMed 8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE Brain;
RX   MEDLINE 96183052; PubMed 8607868;
RA   Townson S., Lagercrantz J., Grimmond S., Silins G.,
RA   Nordenskjoeld M., Weber G., Hayward N.K.;
RT   "Characterization of the murine VEGF-related factor gene.";
RL   Biochem. Biophys. Res. Commun. 220:922-928(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN HEART, BRAIN, KIDNEY
CC       AND SKELETAL MUSCLE.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; U48800; AAB06273.1; -.
DR   EMBL; U43837; AAC52553.1; -.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:106199; Vegfb.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin-binding.
FT   SIGNAL         1     21       POTENTIAL.
FT   CHAIN         22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21442 MW;  D52A055FB995E9CA CRC64;

  Query Match             14.1%;  Score 148.5;  DB 1;  Length 188;
  Best Local Similarity   31.3%;  Pred. No. 2.1e-07;
  Matches   36;  Conservative   19;  Mismatches   55;  Indels    5;  Gaps    3;

Qy         70 SRTEETI KFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVAINTFFKPPCVSV 128
               :||:  : :|     :  :::  ||     | | | |||| :  :  |             | ||:|
Db         17 ARTQAPVSQFDGPSHQKKVVPWIDVYARAT-CQPREVVVPLSMELMGNVVKQLVPSCVTV 75

Qy        129 YRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSK 183
                ||||||  :||:|: |       :     :   |   |  ||   :     :|    |: |  |  |
Db         76 QRCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE-  MSLEEHSQCECRPK 127


RESULT 15
VEGB_HUMAN
ID   VEGB_HUMAN     STANDARD;      PRT;   188 AA.
AC   P49765;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VEGF RELATED
DE   FACTOR).
GN   VEGFB OR VRF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID 9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96197355; PubMed=8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE 97077124; PubMed 8919691;
RA   Grimmond S., Lagercrantz J., Drinkwater C., Silins G., Townson S.,
RA   Pollock P., Gotley D., Carson E., Rakar S., Nordenskjoeld M., Ward L.,
RA   Hayward N., Weber G.;
RT   "Cloning and characterization of a novel human gene related to
RT   vascular endothelial growth factor.";
RL   Genome Res. 6:124-131(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN ALL TISSUES EXCEPT LIVER.
CC       HIGHEST LEVELS FOUND IN HEART, SKELETAL MUSCLE AND PANCREAS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   -------- ----------------------------------------------------------------
DR   EMBL; U48801; AAB06274.1; -.
DR   EMBL; U43369; AAA91464.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601398; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin-binding.
FT   SIGNAL        1     21       POTENTIAL.
FT   CHAIN        22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21261 MW;  F04654D5A3727194 CRC64;


  Query Match             14.8%;  Score 145;  DB 1;  Length 188;
  Best Local Similarity   32.7%;  Prod. No. 4.6e-07;
  Matches   34;  Conservative   15;  Mismatches   51;  Indels    4;  Gaps    2;

Qy      83 AAHYNTEIIKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEG 139
           |  :  :::  ||   | | | |||| : :  |          | ||:| ||||||  :|
Db      28 APGHQRKVVSWIDVYTRAT-CQPREVVVPLTVELMGTVAKQLVPSCVTVQRCGGCCPDDG 86

Qy     140 LQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSK 183
           |:|: |    :   :  |  | ||  :   :|   |: | |  |
Db      87 LECVPTGQHQVRMQILMIRYPSSQLGE---MSLEEHSQCECRPK 127


Search completed: December 26, 2001, 11:44:02
Job time: 865 sec
```

GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:44:07 ; Search time 100.34 Seconds
(without alignments)
285.722 Million cell updates/sec

Title: US-09-534-376A-8_COPY_32_227
Perfect score: 1058
Sequence: 1 FESGLDLSDAEPDAGEATAY.....SCRCMSKLDVYKQVHSYIPP 196

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 473505 seqs, 146272329 residues

Total number of hits satisfying chosen parameters: 473505

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_17:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match %	Length	DB	ID	Description
1	972	92.3	420	6	Q9XS50	Q9xs50 bos taurus
2	908	86.2	418	13	O57352	O57352 coturnix co
3	489	46.4	358	11	P97946	P97946 mus musculu
4	485	46.1	326	11	O35251	O35251 rattus norv
5	478	45.4	354	4	O43915	O43915 homo sapien
6	377	35.8	126	11	O35757	O35757 rattus norv
7	195	18.5	171	4	Q9H1W8	Q9h1w8 homo sapien
8	195	18.5	209	4	O60720	O60720 homo sapien
9	195	18.5	222	4	Q9H1W9	Q9h1w9 homo sapien
10	195	18.5	254	4	Q16889	Q16889 homo sapien
11	192	18.2	147	4	Q9UH58	Q9uh58 homo sapien
12	192	18.2	174	4	Q9UL23	Q9ul23 homo sapien
13	191.5	18.2	214	6	Q9MYV3	Q9myv3 canis famil
14	190.5	18.1	190	6	Q9GKR0	Q9gkr0 equus cabal
15	190.5	18.1	209	6	Q9XSF4	Q9xsf4 canis famil
16	190.5	18.1	214	6	Q9XSF5	Q9xsf5 canis famil
17	187.5	17.8	190	6	Q9XSF3	Q9xsf3 canis famil
18	186.5	17.7	190	6	Q9GL52	Q9q152 sus scrofa
19	183	17.4	126	6	Q9BDP7	Q9bdp7 macaca mula
20	182	17.3	191	4	O75875	O75875 homo sapien
21	181.5	17.2	190	11	Q9QX39	Q9qx39 spalax leuc
22	179.5	17.0	148	13	O42571	O42571 xenopus lae
23	179.5	17.0	194	13	O42572	O42572 xenopus lae
24	177	16.8	124	6	Q9GK00	Q9gk00 callithrix
25	173.5	16.5	118	6	Q9MZB1	Q9mzb1 ovis aries
26	173.5	16.5	190	6	O77643	O77643 ovis aries
27	172.5	16.4	170	11	Q9JKX7	Q9jkx7 rattus norv
28	172.5	16.4	214	11	Q90XG7	Q9qxq7 rattus norv
29	170.5	16.2	146	11	Q99QXG6	Q9qxq6 rattus norv
30	165.5	15.7	190	11	Q99PS1	Q99ps1 mesocricetu
31	165	15.7	144	13	O73822	O73822 brachydanio
32	165	15.7	188	13	O73682	O73682 brachydanio
33	161	15.3	142	11	Q9ERL6	Q9er16 mesocricetu
34	160	15.2	132	12	Q9YMF3	Q9ymf3 orf virus.
35	151	14.3	149	4	Q9Y6S8	Q9y6s8 homo sapien
36	151	14.3	170	4	Q9BV78	Q9bv78 homo sapien
37	148.5	14.1	207	11	Q64290	Q64290 mus musculu
38	148	14.1	149	6	Q9XS47	Q9xs47 bos taurus
39	148	14.1	150	11	O54881	O54881 rattus norv
40	147	14.0	188	6	Q9XS48	Q9xs48 bos taurus
41	147	14.0	193	6	Q9XS49	Q9xs49 bos taurus
42	146	13.9	110	11	O88911	O88911 rattus norv
43	145	13.8	207	4	Q16528	Q16528 homo sapien
44	144	13.7	158	11	Q63434	Q63434 rattus norv
45	143	13.6	78	6	Q9N1S2	Q9n1s2 capreolus c

ALIGNMENTS

RESULT 1
Q9XS50
ID Q9XS50 PRELIMINARY; PRT: 420 AA.
AC Q9XS50;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
RT "Structure and expression of bovine VEGF family.";
RL Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AB004275; BAA77687.1; -.
DR HSSP; P15692; 1VPP.
DR InterPro; IPR000072; PDGF.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PDGF; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
KW Signal.
FT SIGNAL 1 20 POTENTIAL.
FT CHAIN 21 420 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 420 AA; 46681 MW; 58BA84317A3C8E2D CRC64;

Query Match 92.3%; Score 972; DB 6; Length 420;
Best Local Similarity 91.3%; Pred. No. 3.6e-90;
Matches 179; Conservative 5; Mismatches 12; Indels 0; Gaps 0;

Qy 1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
Db 33 FESGLGTSDTEPDAGENKAYAGKEMEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 92

Qy 61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120

```
            |: |||| | || ||:||||||||||||:||||||||||||||||||||||||| |||||
Db       93 HSTEQANLNIRTGEELKFAAAHYNIEILRSIDNEWRKTQCMPREVCIDVGKEFGAATNTF 152

Qy      121 FKPPCVSVYRCGGCCNSEGLQCMNISTSYLSKTLFEITVPLSQGPKPVIISFANHTSCRC 180
            |||||||||||||||||||| |||||||||||||||||||||||||||||||||||||||
Db      153 FKPPCVSVYRCGGCCNSEGQQCMNISTSYLSKTLFEITVPLSQGPKPVIISFANHTSCRC 212

Qy      181 MSKLDVYRQVHSIIRR 196
            ||||||||||||||||
Db      213 MSKLDVYRQVHSIIRR 228


RESULT      2
O57352
ID   O57352      PRELIMINARY;      PRT;   418 AA.
AC   O57352;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN   VEGF-C.
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Coturnix.
OX   NCBI_TaxID=93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98167900; PubMed=9435294;
RA   Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA   Alitalo K., Le Douarin N.M.;
RT   "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT   of the differentiation of VEGFR2-expressing endothelial cell
RT   precursors.";
RL   Development 125:743-752(1998).
DR   EMBL; Y15837; CAA75799.1; -.
DR   HSSP; P15692; 1VPP.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000476; Glyco_hormone.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00067; GHA; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     31       POTENTIAL.
FT   CHAIN       111    418       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   418 AA;  46839 MW;  099BFCC79151BF2B CRC64;

  Query Match             86.2%;  Score 908;  DB 13;  Length 418;
  Best Local Similarity   82.7%;  Pred. No. 1.1e-83;
  Matches  162;  Conservative   18;  Mismatches   16;  Indels    0;  Gaps    0;

Qy        1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
            :|||     : || |||  |:|||||||||||||||||||||||||||||:|||||||||
Db       31 YESGHGYYEEPGAGEPKAHASKDLEEQLRSVSSVDELMTVLYPEYWKMFKCQLRKGGWQ 90

Qy       61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
            |||| :: ::|:::::||||||||| ||||||| |||||||||||||:|||||||   ||||
Db       91 HNREHSSSDTRSDDSLKFAAAHYNAEILKSIDTEWRKTQCMPREVCVDVGKEFGATTNTF 150

Qy      121 FKPPCVSVYRCGGCCNSEGLQCMNISTSYLSKTLFEITVPLSQGPKPVIISFANHTSCRC 180
            ||||||:||||||||||||||| ||:|:|||||||||||||| ||||||:|||||||||
Db      151 FKPPCVSIYRCGGCCNSEGLQCMNISTNYISKTLFEITVPLSHGPKPVTVSFANHTSCRC 210

Qy      181 MSKLDVYRQVHSIIRR 196
            ||||||||||||||||
Db      211 MSKLDVYRQVHSIIRR 226


RESULT      3
P97946
ID   P97946      PRELIMINARY;      PRT;   358 AA.
AC   P97946;
DT   01-MAY-1997 (TrEMBLrel. 03, Created)
DT   01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR D (C-FOS INDUCED GROWTH FACTOR).
GN   VEGF-D OR FIGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=C57BL/6J;
RX   MEDLINE=97030254; PubMed=8876195;
RA   Orlandini M., Marconcini L., Ferruzzi R., Oliviero S.;
RT   "Identification of a c-fos-induced gene that is related to the
RT   platelet-derived growth factor/vascular endothelial growth factor
RT   family.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:11675-11680(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LUNG;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
DR   EMBL; X99572; CAA67892.1; -.
DR   EMBL; D89628; BAA14002.1; -.
DR   HSSP; P15692; 1VPP.
DR   MGD; MGI:108037; Figf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   358 AA;  40908 MW;  6636B17FBF07037C CRC64;

  Query Match             46.4%;  Score 489;  DB 11;  Length 358;
  Best Local Similarity   50.9%;  Pred. No. 2.2e-41;
  Matches   88;  Conservative   36;  Mismatches   39;  Indels   10;  Gaps    3;

Qy       26 EEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 83
            |:|:|: |::||: : : | ||:::|:|:          :  |:::||  :  : :|||  |
Db       46 EQQIRAASSLEELLQIAHSFDWKLWRCRLKL--------KSLASMDSRSASHRSTRFAATFY 99

Qy       84 NTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 143
             :||  ||  || ||::||| ||| |::|   | |   |||||||||:|:||||||| ||: ||
Db      100 DTETLKVIDEEWQRTQCSPRETCVEVASELGKTTNTFFKPPCVNVFRCGGCCNEEGVMCM 159

Qy      144 NTSTSYLSKTLFEITVPLSQGPKPVIISFANHTSCRCMSKLDVYRQVHSIIRR 196
            ||||||:|| ||||:|||:   |: | :   |||| |:|:         |  :||||
Db      160 NTSTSYISKQLFEISVPLTSVPELVPVKIANHTGCKCLPTGP-RHPYSIIRR 210


RESULT      4
O35251
ID   O35251      PRELIMINARY;      PRT;   326 AA.
AC   O35251;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR D.
GN   VEGF-D.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
```

```
OA   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=SPRAGUE DAWLEY;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
DR   EMBL; AF014827; AAB66557.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   326 AA;  37112 MW;  1261AFA373596C00 CRC64;
```

```
  Query Match             46.1%;  Score 485;  DB 11;  Length 326;
  Best Local Similarity   50.9%;  Pred. No. 5.1e-41;
  Matches   88;  Conservative   35;  Mismatches   40;  Indels   10;  Gaps    3;

Qy      26 EEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSP--TEETIKFAAAHY 83
           ::::: ::::::: : : : :::::::::          :  :::::  :  : :::  :
Db      46 EQQIRAASTLEELLQVAHSEDWKLWRCRLKL  -  - KSLANVDSRSISHPSTPFAATFY 99

Qy      84 NTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 143
           ::: :: :: :::::::: ::: ::::  : :  :::::::::::::::::::::: : ::
Db     100 DTETLKVIDEEWQRTQCSPRETCVEVASELGKTTNTFFKPPCVNVFRCGGCCNEESVMCM 159

Qy     144 NTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           ::::::::: :::::::::  :: : :  :::: ::::      :  :::::
Db     160 NTSTSYISKQLFEISVPLTSVPELVPVKIANHTGCKCLPTAP--RHPYSIIRR 210
```

```
RESULT   5
O43915
ID   O43915      PRELIMINARY;      PRT;   354 AA.
AC   O43915;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GROWTH FACTOR FIGF.
GN   FIGF OR VEGF-D.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98140120; PubMed=9479493;
RA   Rocchiqiani M., Lestingi M., Luddi A., Oriandini M., Franco B.,
RA   Rossi E., Ballabio A., Zuffardi O., Oliviero S.;
RT   "Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1
RT   between the PIGA and the GRPR genes.";
RL   Genomics 47:207-216(1998).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE LUNG;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98118549; PubMed=9435229;
RA   Achen M.G., Jeltsch M., Kukk E., Maekinen T., Vitali A., Wilks A.F.,
RA   Alitalo K., Stacker S.A.;
RT   "Vascular endothelial growth factor D (VEGF-D) is a ligand for the
RT   tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4).";
RL   Proc. Natl. Acad. Sci. U.S.A. 95:548-553(1998).
DR   EMBL; Y12864; CAA73371.1; -.
DR   EMBL; Y12865; CAA73371.1; JOINED.
DR   EMBL; Y12866; CAA73371.1; JOINED.
DR   EMBL; Y12867; CAA73371.1; JOINED.
DR   EMBL; Y12868; CAA73371.1; JOINED.
DR   EMBL; Y12869; CAA73371.1; JOINED.
DR   EMBL; Y12870; CAA73371.1; JOINED.
DR   EMBL; D89630; BAA24264.1; -.
DR   EMBL; AJ000185; CAA03942.1; -.
DR   EMBL; Y12863; CAA73370.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   354 AA;  40444 MW;  2048D769D735173E CRC64;
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  Query Match             45.4%;  Score 478;  DB 4;  Length 354;
  Best Local Similarity   50.3%;  Pred. No. 2.9e-40;
  Matches   87;  Conservative   35;  Mismatches   41;  Indels   10;  Gaps    4;

Qy      26 EEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 83
           :::::: ::::::: : : : :::::::::          :  :::::  :  : :::  :
Db      41 EQQIRAASSLEELLRITHSEDWKLWRCRLRL------KSFTSMDSRSASHRSTRFAAIFY 94

Qy      84 NTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 143
           : ::: :: :: :::::::: ::: ::::  : :  :::::::::::::::::::::: : ::
Db      95 DIETLKVIDEEWQRTQCSPRETCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICM 154

Qy     144 NTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           ::::::::: :::::::::  :: : :  :::: ::::      :  :::::
Db     155 NTSTSYISKQLFEISVPLTSVPELVPVKVANHTGCKCLPTAP--RHPYSIIRR 205
```

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RESULT   6
O35757
ID   O35757      PRELIMINARY;      PRT;   126 AA.
AC   O35757;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR-C (FRAGMENT).
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciuroqnathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=SPRAGUE-DAWLEY; TISSUE LUNG;
RA   Mandriota S.J., Pepper M.S.;
RL   Submitted (JUN-1997) to the EMBL/Genbank/DDBJ databases.
DR   EMBL; AF010302; AAB63248.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1       1
FT   NON_TER     126     126
SQ   SEQUENCE   126 AA;  13977 MW;  8F365AFBC4E037B0 CRC64;
```

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  Query Match             35.8%;  Score 377;  DB 11;  Length 126;
  Best Local Similarity   98.6%;  Pred. No. 1.4e-30;
  Matches   70;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy     126 VSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLD 185
           ||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
```

```
Db       1 VSVYPPGGSNGSLYKEFLPEILQLVSSQCTGVEKPVTISFANHTSCRCMSKLDVYRQVHSII 60

Qy     106 VYRQVHSIIRR 196
           ||||||||||| 
Db      61 VYRQVHSIIRR 71


RESULT    7
Q9H1W8
ID   Q9H1W8       PRELIMINARY;      PRT;   171 AA.
AC   Q9H1W8;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   DJ261G23.6.5 (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AL136131; CAC19517.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   171 AA;  20064 MW;  D02EC7A75FF6E9F8 CRC64;


  Query Match             18.5%;  Score 195;  DB 4;  Length 171;
  Best Local Similarity   28.5%;  Pred. No. 5.2e-12;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;

Qy      98 LMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEELIKFAAAHYNTEILKSIDNEWRK 157
           |:  |:   |          ||  |:          | :||              : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM-   -- -- --DVYQR 49

Qy      98 TQCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEI 157
           : | | |  :|: :|:        ||| || : |||||| |||:| |  | :  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSII 195
              ||    :|| | | | | | ||    :|
Db     110 EP--HQSQHIGEMSFLQHNKCECRPKKDRARQEKCSV 145


RESULT    8
O60720
ID   O60720       PRELIMINARY;      PRT;   209 AA.
AC   O60720;
DT   01-AUG-1998 (TrEMBLrel. 07, Created)
DT   01-MAY-1999 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VEGFi83 PROTEIN (ANGIOGENIC (VASCULAR ENDOTHELIAL GROWTH FACTOR Iso;
DE   (DJ261G23.6.6) (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=KIDNEY;
RX   MEDLINE=99009474; PubMed=9870851;
RA   Lei J., Jiang A., Pei D.;
RT   "Identification and characterization of a new splicing variant of
RT   vascular endothelial growth factor: VEGFi83.";
RL   Biochim. Biophys. Acta, Gene Struct. Expr. 1443:400-406(1998).

RN   [2]
RP   SEQUENCE OF 114-209 FROM N.A.
RC   TISSUE=RETINA;
RA   Jinqjing L., Roque R.S.;
RL   Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AJ010438; CAA09179.1; -.
DR   EMBL; AF062645; AAC16730.1; -.
DR   EMBL; AL136131; CAC19514.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    209       VEGFI83 PROTEIN.
SQ   SEQUENCE   209 AA;  24422 MW;  F01CCEAC0945D6CA CRC64;


  Query Match             18.5%;  Score 195;  DB 4;  Length 209;
  Best Local Similarity   28.5%;  Pred. No. 6.6e-12;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;

Qy      98 LMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEELIKFAAAHYNTEILKSIDNEWRK 157
           |:  |:   |          ||  |:          | :||              : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM-   -- -- --DVYQR 49

Qy      98 TQCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEI 157
           : | | |  :|: :|:        ||| || : |||||| |||:| |  | :  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSII 195
              ||    :|| | | | | | ||    :|
Db     110 EP--HQSQHIGEMSFLQHNKCECRPKKDRARQEKCSV 145


RESULT    9
Q9H1W9
ID   Q9H1W9       PRELIMINARY;      PRT;   232 AA.
AC   Q9H1W9;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   DJ261G23.6.3 (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AL136131; CAC19512.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   232 AA;  27042 MW;  FB49F964446F4D01 CRC64;


  Query Match             18.5%;  Score 195;  DB 4;  Length 232;
  Best Local Similarity   28.5%;  Pred. No. 7.5e-12;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;
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Qy      38 LMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRK 97
           |:  |:   |          ||  |:          | :||               : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM----------DVYQR 49

Qy      98 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 157
           : | | |  :|: :|:       ||| || : ||||||| |||:|: |  | ::  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIR 195
             ||     :||  |  | | |  |  ||    :|
Db     110 KP--HQGQHIGEMSFLQHNKCECRPKKDRARQENPCGPCSER 145


RESULT  10
Q16889
ID   Q16889      PRELIMINARY;      PRT:   254 AA.
AC   Q16889;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (FRAGMENT).
GN   VEGF 206.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92168017; PubMed=1791831;
RA   Houck K.A., Ferrara N., Winer J., Cachianes G., Li B., Leung D.W.;
RT   "The vascular endothelial growth factor family: identification of a
RT   fourth molecular species and characterization of alternative splicing
RT   of RNA.";
RL   Mol. Endocrinol. 5:1806-1814(1991).
DR   EMBL; S85192; AAC63102.1; -.
DR   EMBL; S85224; AAC63101.1; -.
DR   EMBL; S85199; AAC63101.1; JOINED.
DR   EMBL; S85201; AAC63101.1; JOINED.
DR   EMBL; S85219; AAC63101.1; JOINED.
DR   EMBL; S85222; AAC63101.1; JOINED.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1       1
SQ   SEQUENCE   254 AA;  29461 MW;  069DFE9B9723DBA8 CRC64;


  Query Match             18.5%;  Score 195;  DB 4;  Length 254;
  Best Local Similarity   28.5%;  Pred. No. 8.4e-12;
  Matches   45;  Conservative   21;  Mismatches   66;  Indels   26;  Gaps    3;

Qy      38 LMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRK 97
           |:  |:   |          ||  |:          | :||               : :::
Db      36 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM----------DVYQR 71

Qy      98 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 157
           : | | |  :|: :|:       ||| || : ||||||| |||:|: |  | ::  :  |
Db      72 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 131

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIR 195
             ||     :||  |  | | |  |  ||    :|
Db     132 KP--HQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVR 167


RESULT  11
Q9UH58
ID   Q9UH58      PRELIMINARY;      PRT:   147 AA.
AC   Q9UH58;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR ISOFORM 121 PRECURSOR
DE   (DJ251G24.6 2).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Sato J.D., Whitney R.G.;
RT   "Human cDNA for vascular endothelial growth factor isoform VEGF121.";
RL   Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF214570; AAF19659.1; -.
DR   EMBL; AL136131; CAC19515.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1      26       POTENTIAL.
SQ   SEQUENCE   147 AA;  17219 MW;  DDF4D6994249BED6 CRC64;


  Query Match             18.2%;  Score 192;  DB 4;  Length 147;
  Best Local Similarity   28.9%;  Pred. No. 8.8e-12;
  Matches   44;  Conservative   20;  Mismatches   62;  Indels   26;  Gaps    3;

Qy      38 LMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRK 97
           |:  |:   |          ||  |:          | :||               : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH----------EVVKFM----------DVYQR 49

Qy      98 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 157
           : | | |  :|: :|:       ||| || : ||||||| |||:|: |  | ::  :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 189
             ||     :||  |  | | |  |  ||
Db     110 KP--HQGQHIGEMSFLQHNKCECRPKKDRARQ 139


RESULT  12
Q9UL23
ID   Q9UL23      PRELIMINARY;      PRT:   174 AA.
AC   Q9UL23;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR PERMEABILITY FACTOR 148.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=GLOMERULI;
RX   MEDLINE=99394945; PubMed=10464055;
RA   Whittle C.J., Gillespie K.M., Harrison R., Mathieson P.M.,
RA   Harper S.J.;
RT   "Heteroqeneous vascular endothelial growth factor (VEGF) isoform mRNA
RT   and receptor mRNA expression in human glomeruli, and the
RT   identification of VEGF148 mRNA, a novel truncated splice variant.";
RL   Clin. Sci. 97:303-312(1999).
DR   EMBL; AF091352; AAD55345.1; -.
DR   HSSP; P15692; 2VPF.
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DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   174 AA;  20218 MW;  AE88400CA7757644 CRC64;

  Query Match             18.2%;  Score 192;  DB 4;  Length 174;
  Best Local Similarity   28.9%;  Pred. No. 1.1e-11;
  Matches   44;  Conservative   20;  Mismatches   62;  Indels   26;  Gaps    3;

Qy         38 LMIVLPPEWEMYEKGQSKHGWQQNEEQANLNSKTEEIIEEAAAHYNTEILKSIDNEWEE 97
              |:  |:   |            ||  |:               | :||             : :::
Db         14 LLLYLHHAKWSQAAPMAEGGGQNHH    -        --EVVKFM -  --     ----DVYQR 49

Qy         98 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 157
                : | | |  :|: :|:        ||| || : |||||| |||:|: |   | ::   :  |
Db         50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy        158 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 189
                    ||      :||  |  |  |   |  |  ||
Db        110 KP  HQGQHIGEMSFLQHNKCECRPKKDRARQ 139


RESULT 13
Q9MYV3
ID   Q9MYV3      PRELIMINARY;      PRT;   214 AA.
AC   Q9MYV3;
DT   01-OCT-2000 (TrEMBLrel. 15, Created)
DT   01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 188 PRECURSOR.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID 9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE 20125616; PubMed 10661874;
RA   Scheidegger P., Weiglhofer W., Suarez S., Kaser-Hotz B., Steiner R.,
RA   Ballmer-Hofer K., Jaussi R.;
RT   "Vascular endothelial growth factor (VEGF) and its receptors in tumor
RT   bearing dogs.";
RL   Biol. Chem. 380:1449-1454(1999).
DR   EMBL; AJ133758; CAB82426.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
SQ   SEQUENCE   214 AA;  25175 MW;  0AC980A158C44B27 CRC64;

  Query Match             18.2%;  Score 191.5;  DB 6;  Length 214;
  Best Local Similarity   29.9%;  Pred. No. 1.5e-11;
  Matches   44;  Conservative   18;  Mismatches   60;  Indels   25;  Gaps    3;

Qy         54 LEKGGWQHNEEQANLNSRTEEIIKEAAAHYNTEILKSIDNEWKKTQCMPREVCIDVGKEF 113
              |     |        |     :  | :||                 : :::: | | |   :|: :|:
Db         18 LHHAKWSQAAPMAGGEHKPHEVVKFM  --               DVYQRSYCRPIETLVDIFQEY 64

Qy        114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL----SQGPKPV 168
                        ||| || : |||||| |||:|: |          | ||: :        ||
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE         FNITMQIMRIKPHQGQHIG 117

Qy        169 TISFANHTSCRCMSKLDVYRQVHSIIR 195
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              :||  |: |  |  | |  ||    ||
Db        118 EMSFLQHSKCECRPKKDRARQEKKSIR 144


RESULT 14
Q9GKR0
ID   Q9GKR0      PRELIMINARY;      PRT;   190 AA.
AC   Q9GKR0;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 165.
OS   Equus caballus (Horse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX   NCBI_TaxID 9796;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S.,
RA   Kawabata H., Uto N., Oka T., Maruyama I., Sakamoto H.;
RT   "Cloning of cDNA and High-Level Expression of Equine Vascular
RT   Endothelial Growth Factor (VEGF).";
RL   Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AB053350; BAB20890.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   190 AA;  22312 MW;  87E9E161439E5F87 CRC64;

  Query Match             18.1%;  Score 190.5;  DB 6;  Length 190;
  Best Local Similarity   30.4%;  Pred. No. 1.7e-11;
  Matches   42;  Conservative   20;  Mismatches   57;  Indels   19;  Gaps    3;

Qy         54 LEKGGWQHNEEQANLNSRTEEIIKEAAAHYNTEILKSIDNEWKKTQCMPREVCIDVGKEF 113
              |     |        |     :| | :||                 : :::: | | |   :|: :|:
Db         18 LHHAKWSQAAPMAEGEHKTHEVVKFM ------------ DVYQRSYCRPIETLVDIFQEY 64

Qy        114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 171
                        ||| || : ||||||| |||:|: |:    ::   :  |      ||  |       :|
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTAEFNITMQIMRIKPHQSQHIG---EMS 120

Qy        172 FANHTSCRCMSKLDVYRQ 189
              |   |: |  |  |  |  ||
Db        121 FLQHSKCECRPKKDKARQ 138


RESULT 15
Q9XSF4
ID   Q9XSF4      PRELIMINARY;      PRT;   208 AA.
AC   Q9XSF4;
DT   01-NOV-1999 (TrEMBLrel. 12, Created)
DT   01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 182.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID 9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Jingjing L., Roque R.S.;
RL   Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF133249; AAD29683.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
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DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   208 AA;  24400 MW;  CF77AC591F5C2BBE CRC64;


  Query Match             18.1%;  Score 190.5;  DB 6;  Length 208;
  Best Local Similarity   29.3%;  Pred. No. 1.9e-11;
  Matches   43;  Conservative   19;  Mismatches   60;  Indels   25;  Gaps    3;

Qy      54 LRKGGWQHNRFQANLNSRTEETIKFAAAHYNTEILKSIDNEWFKTVCMPPEVCIDVGKEF 113
           |   |  |     |    :  | :||              : :::: | | |  :|: :|:
Db      18 LHHAKWSQAAPMAGGEHKPHEVVKFM------------DVYQRSYCRPIETLVDIFQEY 64

Qy     114 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEITVPL-----SQGPKPV 168
                ||| || : |||||||| |||:|: |         | ||: :       ||
Db      65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPIEE-------FNIIMQIMRIKPHQGQHIG 117

Qy     169 TISFANHTSCRCMSKLDVYRQVHSIIR 195
           :|| |: | |  | |  ||    :|
Db     118 EMSFLQHSKCECRPKKDRARQEKKSVR 144


Search completed: December 26, 2001, 11:43:08
Job time: 896 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 10:34:27 ; Search time 102.82 Seconds
(without alignments)
301.855 Million cell updates/sec

Title: US-09-534-376A-8
Perfect score: 2336
Sequence: 1 MHLLGFFSVACSLLAAALLP.....STSEEVCRCVPSYWKRPQMS 419

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073290 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : A_Geneseq_1101:*
1: /SIDS2/gcqdata/geneseq/geneseqp/AA1980.DAT:*
2: /SIDS2/gcqdata/geneseq/geneseqp/AA1981.DAT:*
3: /SIDS2/gcqdata/geneseq/geneseqp/AA1982.DAT:*
4: /SIDS2/gcqdata/geneseq/geneseqp/AA1983.DAT:*
5: /SIDS2/gcqdata/geneseq/geneseqp/AA1984.DAT:*
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7: /SIDS2/gcqdata/geneseq/geneseqp/AA1986.DAT:*
8: /SIDS2/gcqdata/geneseq/geneseqp/AA1987.DAT:*
9: /SIDS2/gcqdata/geneseq/geneseqp/AA1988.DAT:*
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11: /SIDS2/gcqdata/geneseq/geneseqp/AA1990.DAT:*
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13: /SIDS2/gcqdata/geneseq/geneseqp/AA1992.DAT:*
14: /SIDS2/gcqdata/geneseq/geneseqp/AA1993.DAT:*
15: /SIDS2/gcqdata/geneseq/geneseqp/AA1994.DAT:*
16: /SIDS2/gcqdata/geneseq/geneseqp/AA1995.DAT:*
17: /SIDS2/gcqdata/geneseq/geneseqp/AA1996.DAT:*
18: /SIDS2/gcqdata/geneseq/geneseqp/AA1997.DAT:*
19: /SIDS2/gcqdata/geneseq/geneseqp/AA1998.DAT:*
20: /SIDS2/gcqdata/geneseq/geneseqp/AA1999.DAT:*
21: /SIDS2/gcqdata/geneseq/geneseqp/AA2000.DAT:*
22: /SIDS2/gcqdata/geneseq/geneseqp/AA2001.DAT:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2336	100.0	419	18	AAW17837	Human foetal liver
2	2336	100.0	419	18	AAW00932	Human Flt4 recepto
3	2336	100.0	419	19	AAW75740	Human vascular end
4	2336	100.0	419	20	AAW86203	Human VEGC protein
5	2336	100.0	419	21	AAB10648	Human VEGF-C prote
6	2336	100.0	419	21	AAB29048	Human prepro-vascu
7	2336	100.0	419	21	AAY70749	Human vascular end
8	2336	100.0	419	21	AAY70982	Human VEGF-C. Hom
9	2336	100.0	419	22	AAB37605	Human vascular end
10	2327	99.6	419	18	AAW13833	Vascular endotheli
11	2326	99.6	419	20	AAY30518	Full length human
12	2326	99.6	419	20	AAY22320	Vascular endotheli
13	2326	99.6	419	21	AAY97144	Human VEGF-B prote
14	2326	99.6	419	22	AAY97570	Vascular endotheli
15	2325	99.5	419	19	AAW75751	Human vascular end
16	2323	99.4	419	18	AAW11478	Human VEGF-C full
17	2237	95.8	399	20	AAW86237	Mouse vascular end
18	2048	87.7	415	19	AAW75742	Mouse Flt4 recepto
19	2043	87.5	415	18	AAW00933	A truncated vascul
20	1995	85.4	350	20	AAY30519	Truncated human VE
21	1995	85.4	350	20	AAY22321	Truncated vascular
22	1995	85.4	350	21	AAY97145	Human VEGF-2 prote
23	1995	85.4	350	22	AAY97577	Vascular endotheli
24	1990	85.2	350	16	AAR82686	Human growth facto
25	1813	77.6	318	20	AAY08284	Quail Flt4 recepto
26	1804.5	77.2	418	18	AAW00934	Quail vascular end
27	1804.5	77.2	418	19	AAW75743	Human VEGF-C trunc
28	1761	75.4	307	20	AAW86222	Human VEGF-C trunc
29	1730	74.1	302	20	AAW86223	Human VEGF-C trunc
30	1709	73.2	297	20	AAW86224	Human VEGF-C trunc
31	1676	71.7	292	20	AAW86225	Homo sapiens vascu
32	704.5	30.2	325	19	AAW53240	Human VEGF-D prote
33	704.5	30.2	325	22	AAY97572	Human zveq12 growt
34	704.5	30.2	354	19	AAW49036	Homo sapiens vascu
35	704.5	30.2	354	19	AAW53241	Human vascular end
36	704.5	30.2	354	19	AAW44293	Human VEGD protein
37	704.5	30.2	354	21	AAB10649	Human VEGF-D prote
38	704.5	30.2	354	21	AAB29049	Human prepro-vascu
39	704.5	30.2	354	21	AAY70750	Human vascular end
40	704.5	30.2	354	21	AAY70983	Human VEGF-DI prot
41	704.5	30.2	354	22	AAY97573	Human VEGF-D. Hom
42	704.5	30.2	354	22	AAB37606	Human growth facto
43	703.5	30.1	337	20	AAY08286	Mus musculus vascu
44	703.5	30.1	358	19	AAW53242	Mouse vascular end
45	703.5	30.1	358	19	AAW44295	

ALIGNMENTS

RESULT 1
AAW17837
ID AAW17837 standard; Protein; 419 AA.
XX
AC AAW17837;
XX
DT 13-JAN-1998 (first entry)
XX
DE Human foetal liver kinase A binding protein flk-1bp.
XX
KW foetal liver kinase 1 binding protein; human; flk-1bp;
KW receptor tyrosine kinase; vasculogenesis; angiogenesis;
KW wound healing; tumour; therapy; antagonist; antibody.
XX
OS Homo sapiens.
XX

FH	Key	Location/Qualifiers
FT	Peptide	1..20
FT		/label= Sig_peptide
FT	Protein	21..419
FT		/label= Mat_protein
FT		/note= "(Claim 10)"
FT	Peptide	21..35
FT		/label= N-terminal
FT		/note= "(Claim 9)"

XX
PN WO9717442-A1.
XX
PD 15-MAY-1997.
XX
PF 05-NOV-1996; 96WO-US17584.
XX
PR 08-NOV-1995; 95US-0554374.
XX

PA (IMMV) IMMUNEX CORP.
XX
PI Lyman SD;
XX
DR WPI; 1997-281031/25.
DR N-PSDB; AAT68811.
XX
PT DNA encoding a human foetal liver kinase 1 binding protein - used
PT to treat conditions with insufficient protein, deliver agents to
PT cells and identify antagonists to treat protein mediated conditions
XX
PS Claim 1; Page 30-32; 43pp; English.
XX
CC This polypeptide comprises a human foetal liver kinase 1 binding
CC protein (flk-1bp) (see AAW17837) that binds to the receptor tyrosine
CC kinase flk-1 expressed on vascular endothelial and other cells.
CC The mature flk1-bp can be secreted from host cells transformed with
CC an expression vector including an isolated flk-1bp cDNA clone (see
CC AAT68811). Flk-1bp can be used to isolate cells to which it binds,
CC for use in studying the roles of such cells and of flk-1 in
CC vasculogenesis and angiogenesis. Angiogenesis inhibition or
CC increased vascularisation may be clinically desirable (e.g. to
CC suppress solid tumour growth or in wound healing, respectively).
CC The flk-1bp can be administered to treat conditions with defective
CC or insufficient flk-1. Polypeptides may also act as carriers to
CC deliver diagnostic/therapeutic agents to cells to which flk1-bp
CC binds, to generate antibodies, and to identify flk-1bp antagonists
CC useful for treating flk-1bp mediated conditions.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 2336; DB 18; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.1e-172;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419
```

RESULT 2
AAW00932
ID AAW00932 standard; Protein; 419 AA.
XX
AC AAW00932;
XX
DT 10-NOV-1997 (first entry)
XX
DE Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
KW VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
KW vascular endothelial growth factor receptor-3; ligand;
KW angiogenesis; wound healing; lymph vessel; lymphangioma;
KW cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..102
FT /label= Prepro_peptide
FT Peptide 32..227
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 15)"
FT Peptide 103..217
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 12)"
FT Peptide 103..225
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 13)"
FT Peptide 103..227
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 14)"
FT Peptide 113..213
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 10)"
FT Peptide 113..227
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 11)"
FT Peptide 131..211
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 9)"
FT Peptide 161..221
FT /note= "preferred active fragment of VEGF-C,
FT retaining Flt4 ligand activity (Claim 8)"
XX
PN WO9705250-A2.
XX
PD 13-FEB-1997.
XX
PF 01-AUG-1996; 96WO-FI00427.
XX
PR 28-JUN-1996; 96US-0671573.
PR 01-AUG-1995; 95US-0510133.
PR 12-JAN-1996; 96US-0585895.
PR 14-FEB-1996; 96US-0601132.
XX
PA (UYHE) UNIV HELSINKI LICENSING LTD OY.
XX
PI Alitalo K, Joukov V;
XX
DR WPI; 1997-145688/13.
DR N-PSDB; AAT84276.
XX
PT Flt4 receptor tyrosine kinase ligand and related nucleic acid - used
PT to modulate growth of endothelial cells and for diagnosis of
PT endothelial cell diseases
XX
PS Claim 7; Page 112-113; 183pp; English.
XX
CC This polypeptide comprises the pre-pro sequence of human VEGF-C,
CC a novel ligand that binds specifically to human Flt4 receptor
CC tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
CC receptor. Its sequence was deduced from a cDNA clone (AAT84276)
CC obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)
CC library. The polypeptide, or its active fragments, can be
CC expressed in transformed or transfected host cells for use in
CC claimed methods for detecting endothelial cells (e.g. to image
CC lymphatic vessels, endothelial venules, Flt4 receptor in
CC histochemical tissue) and also to modulate the growth of mammalian
CC endothelial cells (e.g. to accelerate angiogenesis and to promote
CC endothelial function of lymphatic vessels). Inhibitors of

```
CC   VEGF-C, such as antibodies, can be used to control endothelial
CC   cell proliferation, e.g. lymphangioma or metastatic cancer.
CC   Mouse and quail VEGF-C sequences (see AAW00934-35) have also been
CC   isolated.
XX
SQ   Sequence   419 AA;

 Query Match             100.0%;  Score 2336;  DB 18;  Length 419;
 Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
 Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db       1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy      61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db      61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy     121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db     121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
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Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
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Qy     301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
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Qy     361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db     361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419


RESULT   3
AAW75740
ID   AAW75740 standard; Protein; 419 AA.
XX
AC   AAW75740;
XX
DT   20-NOV-1998  (first entry)
XX
DE   Human vascular endothelial growth factor C protein
XX
KW   FLT4; vascular endothelial growth factor C; vascular endothelial cell;
KW   lymphatic endothelial cell; myelopoiesis; angiogeneses; inflammation;
KW   lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
XX
OS   Homo sapiens.
XX
PN   WO9833917-A1.
XX
PD   06-AUG-1998.
XX
PF   02-FEB-1998;   98WO-US01973.
XX
PR   05-FEB-1997;   97US-0795430.
XX
PA   (LUDW ) LUDWIG INST CANCER RES.
PA   (UYHE ) UNIV HELSINKI LICENSING LTD.
XX
PI   Alitalo K;  Jeltsch V;
XX
DR   WPI; 1998-437470/37.
DR   N-PSDB; AAV52576.
XX
PT   New isolated vascular endothelial growth factor polypeptide(s)
PT   used to develop products for treating, e.g. cancers, inflammation,
PT   oedema, granulocytopenia or for wound healing or tissue
PT   transplantation
XX
PS   Claim 1; Page 112-115; 177pp; English.
XX
CC   The vascular endothelial growth factor C (VEGF-C) polypeptides have
CC   activities affecting growth and migration of vascular endothelial cells,
CC   promoting growth of lymphatic endothelial cells and lymphatic vessels,
CC   increasing vascular permeability, and affecting myelopoiesis. The
CC   products can be used for stimulating angiogeneses, for inhibiting
CC   angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
CC   of inflammation, oedema, elephantiasis, or Milroy's disease. They can
CC   also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC   They can also be used for modulating the growth of endothelial cells.
CC   They can also be used to stimulate lymphocyte production and maturation,
CC   and to promote or inhibit trafficking of leucocytes between tissues and
CC   lymphatic vessels or to affect migration in and out of the thymus.
XX
SQ   Sequence   419 AA;

 Query Match             100.0%;  Score 2336;  DB 19;  Length 419;
 Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
 Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db       1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy      61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db      61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy     121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db     121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db     181 lsktlfeitvplsqqpkpvtistanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
Db     241 ktcptnymwnnhicrclaqedfmtssdaqddstdqfhdicqpnkeldeetcqcvcraglr 300

Qy     301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
Db     301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy     361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db     361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419


RESULT   4
AAW86203
ID   AAW86203 standard; protein; 419 AA.
XX
AC   AAW86203;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human vascular endothelial growth factor (VEGF)-C sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing, skin; vascular permeability.
XX
OS   Homo sapiens.
```

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XX
PN   WO9849300 A2.
XX
PD   05-NOV-1998.
XX
PF   24-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor related protein
PT   subunits - lack part of the N terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Disclosure; Fig 1; 113pp; English.
XX
CC   This represents the amino acid sequence of human vascular endothelial
CC   growth factor (VEGF) C protein. The invention provides truncated VRP
CC   (VEGF related protein) subunits that have at least one amino acid
CC   N terminal to the first Cys of the core sequence deleted. Host cells
CC   transformed or transfected with expression vectors containing nucleic
CC   acids encoding the truncated VRP subunits are used to produce the
CC   truncated proteins recombinantly. The truncated VRP subunits, optionally
CC   expressed from gene therapy vectors, have in vivo and in vitro angiogenic
CC   activity and are used to stimulate angiogenesis, particularly coronary
CC   collateral vessel development in cases of cardiac ischaemia; to stimulate
CC   endothelial cell growth and migration in vitro; to treat heart disease;
CC   to treat ischaemia (e.g.cardiac, chronic coronary or chronic lower limb
CC   ischaemia; stroke and peripheral vascular disease); to promote healing of
CC   wounds (of skin or intestines), and to increase vascular permeability.
XX
SQ   Sequence   419 AA;

  Query Match             100.0%;  Score 2336;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
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Db          1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419

RESULT   5
AAB10648
ID   AAB10648 standard; Protein; 419 AA.
XX
AC   AAB10648;
XX
DT   19-JAN-2001  (first entry)
XX
DE   Human VEGC protein.
XX
KW   VEGF-X; vascular endothelial growth factor; human; vulnerary; cytostatic;
KW   antirheumatic; antiarthritic; antipsoriatic; antidiabetic; treatment;
KW   angiogenesis regulator; vascularization regulator; cancer; psoriasis;
KW   rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;
KW   tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
KW   venous sore; diabetic ulcer; burns; skin graft growth; VEGC.
XX
OS   Homo sapiens.
XX
PN   WO200037641 A2.
XX
PD   29-JUN-2000.
XX
PF   21-DEC-1999;   99WO-US30503.
XX
PR   22-DEC-1998;   98GB-0028377.
PR   18-MAR-1999;   99US-0124967.
PR   08-NOV-1999;   99US-0164131.
XX
PA   (JANC ) JANSSEN PHARM NV.
XX
PI   Gordon RD,  Sprengel JJ,  Yon JR,  Dijkmans JJH,  Gosiewska A;
PI   Dhanaraj SN,  Xu J;
XX
DR   WPI; 2000-442669/38.
XX
PT   New vascular endothelial growth factor protein, useful for treating or
PT   preventing diseases associated with inappropriate angiogenesis activity
PT   such as cancer, rheumatoid arthritis, psoriasis and wounds -
XX
PS   Disclosure; Fig 11; 127pp; English.
XX
CC   This invention describes a novel vascular endothelial growth factor X
CC   (VEGF-X) protein (Ia) and its encoding polynucleotide (IIa) which has
CC   vulnerary, cytostatic, antirheumatic, antiarthritic, antipsoriatic and
CC   antidiabetic activity and acts as an angiogenesis and vascularization
CC   regulator. An antisense molecule of the invention is useful for treating
CC   or preventing cancer, rheumatoid arthritis, psoriasis and diabetic
CC   retinopathy by inhibiting angiogenic activity or inappropriate
CC   vascularization including formation and proliferation of new blood
CC   vessels, growth and development of tissues, tissue regeneration and organ
CC   and tissue repair in a subject. The products of the invention are useful
CC   for preparing medicaments for treating wounds such as dermal ulcers,
CC   pressure sores, venous sores, diabetic ulcers and burns and to promote
CC   skin graft growth, tissue repair, proliferation of new blood vessels,
CC   tissue regeneration and organ repair by promoting angiogenic activity or
CC   vascularization. This sequence represents the human VEGC protein used
CC   to illustrate the method of the invention.
XX
SQ   Sequence   419 AA;

  Query Match             100.0%;  Score 2336;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120
```

```
Qy      121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      121 sidnewrktqcmpreveidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy      181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      181 lskttfeitvplsqgpkpvtistanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy      241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcragLr 300

Qy      301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvcKrtcprnqplnpgkcac 360

Qy      361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419
```

```
RESULT    6
AAB29048
ID   AAB29048 standard; Protein; 419 AA.
XX
AC   AAB29048;
XX
DT   31-JAN-2001  (first entry)
XX
DE   Human VEGF-C protein sequence.
XX
KW   Human; Flt4; fms-like tyrosine kinase 4, lymphoedema;
KW   vascular endothelial growth factor receptor 3; VEGFR-3;
KW   Milroy-Nonne syndrome; lymphoedema praecox; VEGF-C;
KW   vascular endothelial growth factor C.
XX
OS   Homo sapiens.
XX
PN   WO200058511-A1.
XX
PD   05-OCT-2000.
XX
PF   26-MAR-1999;   99WO-US06133.
XX
PR   26-MAR-1999;   99WO-US06133.
XX
PA   (LUDW-) LUDWIG INST CANCER RES
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (UYPI-) UNIV PITTSBURGH.
XX
PI   Ferrell RE,  Alitalo K,  Fineqold DN,  Karkkainen M;
XX
DR   WPI; 2000-679298/66.
DR   N-PSDB; AAC62406.
XX
PI   Screening a human subject for increased risk of developing a lymphatic
PI   disorder, comprises assaying a nucleic acid to determine a mutation
PT   altering the sequence of a vascular endothelial growth factor
PT   receptor-3 -
XX
PS   Disclosure; Page 60-61; 76pp; English.
XX
CC   The present sequence is the protein sequence for the human vascular
CC   endothelial growth factor C (VEGF-C). It was used to demonstrate the
CC   methods of the invention, which involve the screening of individuals to
CC   determine which vascular endothelial growth factor receptor 3 (VEGFR-3,
CC   also known as Flt4 or fms-like tyrosine kinase 4) alleles they possess
CC   and thus their likelihood of developing hereditary lymphoedema
CC   Conditions associated with lymphoedema include Milroy-Nonne syndrome,
CC   which is early onset lymphoedema and lymphoedema praecox, which is late
CC   onset.
XX
SQ   Sequence   419 AA;
```

```
 Query Match             100.0%;  Score 2336;  DB 21;  Length 419;
 Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
 Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        1 mhllgffsvacsllaaallpgpreapaaaaafesglDlsdaepdageataYaskdleeql 60

Qy       61 RSVSSVDELMTVLYPEYWKMYKCQLEKGGWQHNPEQANLNSRTEETIKFAAAHYNTEILK 120
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       61 rsvssvdelmtvlypeywkmykcqlekggwqhnpeqanlnsrteetikfaaahyntEilk 120

Qy      121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      121 sidnewrktqcmpreveidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy      181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      181 lskttfeitvplsqgpkpvtistanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy      241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcragLr 300

Qy      301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvcKrtcprnqplnpgkcac 360

Qy      361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419
```

```
RESULT    7
AAY70749
ID   AAY70749 standard; Protein; 419 AA.
XX
AC   AAY70749;
XX
DT   17-AUG-2000  (first entry)
XX
DE   Human prepro-vascular endothelial growth factor C.
XX
KW   Human; receptor tyrosine kinase; RTK; Flt4; fms-like tyrosine kinase 4;
KW   VEGFR-3; vascular endothelial growth factor receptor-3; chromosome 5q35;
KW   cytostatic; tumour imaging; anti-tumour therapy; treatment; diagnosis;
KW   neoplastic disease; lymphoma, carcinoma; breast; squamous cell; melanoma;
KW   sarcoma; malignancy; VEGF-C; vascular endothelial growth factor C.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide          1..31
FT                    /label= Signal_peptide
FT
FT   Peptide          32..103
FT                    /label= N-terminal_peptide
FT                    /note= "cleavage of this peptide from partially processed
FT                    VEGF-C produces a fully processed mature form of VEGF-C
FT                    of 21-23 kD which has high affinity to VEGFR-2"
FT
FT   Protein          104..227
FT                    /label= Mature_VEGF-C
FT   Peptide          228..419
FT                    /label= C-terminal_peptide
FT                    /note= "Has a pattern of spaced cysteine residues
FT                    reminiscent of a Balbiani ring 3 protein (BR3P) sequence;
FT                    cleavage of signal peptide and the C-terminal
FT                    peptide produces a partially processed form of VEGF-C of
FT                    about 29 kD which has high affinity to Flt4 (VEGFR-3)"
FT
FT   Binding-site     113..213
FT                    /note= "binds and stimulates VEGF-C receptors; Cys
FT                    at position 156 is essential for VEGFR-2 binding and at
FT
```

```
FT                   165 is essential for VEGFR-2 and VEGFR-3 binding"
FT   Region          131..211
FT                   /note= "important for VEGF-C activity"
XX
PN   WO200021560-A1.
XX
PD   20-APR-2000.
XX
PF   08-OCT-1999;   99WO-US23525.
XX
PR   09-OCT-1998;   98US-0169079.
XX
PA   (LUDW ) LUDWIG INST CANCER RES.
PA   (UYHE ) UNIV HELSINKI LICENSING LTD OY.
XX
PI   Alitalo K,  Kaipainen A,  Valtola R,  Jussila L;
XX
DR   WPI; 2000-317850/27.
XX
PT   Treating neoplastic diseases such as lymphoma, carcinomas, melanomas
PT   and sarcomas, involves administering a compound capable of inhibiting
PT   binding of ligand proteins to fms-like tyrosine kinase 4 receptor
XX
PS   Example 15-17; Page 140-142; 148pp; English.
XX
CC   The patent discloses a method to treat neoplastic disease characterised
CC   by expression of fms-like tyrosine kinase 4 (Flt4) receptor (also
CC   referred as vascular endothelial growth factor receptor 3, VEGFR-3) in
CC   endothelial cells of blood vessels adjacent to malignant neoplasm. The
CC   method involves administering a compound that inhibits binding of a
CC   ligand to Flt4 thereby inhibiting Flt4 mediated proliferation of vascular
CC   endothelial cells. The compound is useful for treating neoplastic disease
CC   such as breast carcinomas, squamous cell carcinomas, lymphomas, melanomas
CC   and sarcomas. Flt4 receptor tyrosine kinase binding compounds can be used
CC   for manufacturing medicament useful for diagnostic screening, imaging and
CC   treatment of malignancies characterised by Flt4 expressing blood cells.
CC   The Flt4 gene maps to chromosomal region 5q35 and is expressed as 5.8 kb
CC   and 4.5 kb mRNAs which differ in their 3' sequences and are
CC   differentially expressed in HEL and DAMI cell lines. Flt4
CC   belongs to a subfamily of class III receptor tyrosine kinases (RTKs).
CC   It is used as a target for tumour imaging and anti-tumour therapy.
CC   The present sequence is a human prepro-vascular endothelial growth
CC   factor C (VEGF-C), a specific example of Flt4 binding compound.
XX
SQ   Sequence   419 AA;

  Query Match             100.0%;  Score 2336;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-172;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419


RESULT    8
AAY70982
ID   AAY70982 standard; Protein; 419 AA.
XX
AC   AAY70982;
XX
DT   09-AUG-2000  (first entry)
XX
DE   Human vascular endothelial growth factor (VEGF)-C protein.
XX
KW   Vascular endothelial growth factor C; VEGF; human; re-endothelialisation;
KW   vascular endothelial growth factor receptor; VEGFR; vascular trauma;
KW   blood vessel; cardiovascular surgery; anti-restenosis agent; prevention;
KW   restenosis; stenosis; percutaneous transluminal coronary angioplasty.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..31
FT                   /label= Signal_peptide
FT                   /note= "Cleavage results in partially processed VEGF-C
FT                   protein (29 kD)"
FT   Peptide         32..103
FT                   /label= Amino-terminal_peptide
FT                   /note= "Cleavage results in fully processed mature
FT                   VEGF-C protein (21-23 kD)"
FT   Protein         104..227
FT                   /label= Mature human VEGF-C
FT                   /note= "Processed vascular epithelial growth factor-C"
FT   Binding-site    83
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Active-site     131..211
FT                   /note= "Essential for biological activity of protein"
FT   Binding-site    137
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Binding-site    156
FT                   /note= "Essential for VEGFR-2 binding"
FT   Binding-site    165
FT                   /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT   Peptide         228..419
FT                   /label= Carboxy_terminal_peptide
FT                   /note= "Cleavage results in partially processed VEGF-C
FT                   protein (29 kD)"
XX
PN   WO200024412-A2.
XX
PD   04-MAY-2000.
XX
PF   26-OCT-1999;   99WO-US24054.
XX
PR   26-OCT-1998;   98US-0105587.
XX
PA   (LUDW ) LUDWIG INST CANCER RES.
PA   (UYHE ) UNIV HELSINKI LICENSING LTD OY.
PA   (YLAH/) YLA-HERTTUALA S.
XX
PI   Yla-herttuala S,  Alitalo K,  Hiltunen MO,  Jeltsch MM,  Achen MG;
XX
DR   WPI; 2000-350584/30.
DR   N-PSDB; AAD00339, AAD00353.
XX
PT   Preventing stenosis and restenosis in mammals using vascular
PT   endothelial growth factor proteins or the nucleic acids encoding them
XX
PS   Claim 5; Page 51-53; 61pp; English.
XX
```

CC The present amino acid sequence is the complete human prepro-vascular
CC endothelial growth factor (VEGF)-C. VEGF-C has the ability to stimulate
CC reendothelialisation of an injured blood vessel, without significant
CC stimulation of smooth muscle cell proliferation. It can bind to and
CC stimulate VEGFR-2 (vascular endothelial growth factor receptor) and/or
CC VEGFR-3 phosphorylation in cells that express such receptors. An
CC anti-restenosis agent comprising either a VEGF-C gene or protein is
CC used in a method to reduce or prevent restenosis and stenosis of a blood
CC vessel following vascular trauma e.g., cardiovascular surgery and
CC percutaneous transluminal coronary angioplasty.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 2336; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.1e-172;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db 1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy 61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db 61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy 121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db 121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy 181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db 181 lsktlfeitvplsqgpkpvtistfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy 241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
Db 241 ktcptnymwnnhicrclaqedfmfssdaggdstdgfhdicgpnkeldeetcqcvcragir 300

Qy 301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
Db 301 pascgphkeldrnscqcvckniifpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy 361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db 361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419

RESULT 9
AAB37605
ID AAB37605 standard; Protein; 419 AA.
XX
AC AAB37605;
XX
DT 27-FEB-2001 (first entry)
XX
DE Human VEGF-C.
XX
KW Human; gene therapy; lymphatic disorder; hereditary lymphedoema; Flt4;
KW vascular endothelial growth factor receptor-3; VEGFR-3; VEGF-C; VEGF-D;
KW tms-like tyrosine kinase 4.
XX
OS Homo sapiens.
XX
PN WO200028470-A1.
XX
PD 26-SEP-2000.
XX
PF 29-SEP-1999; 99CA-2284470.
XX
PR 26-MAR-1999; 99WO-US06133.
PR 16-AUG-1999; 99US-0375248.
XX
PA (UYPI-) UNIV PITTSBURGH.
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA (LUDW-) LUDWIG INST CANCER RES.
XX
PI Alitalo K, Ferrell RE, Finegold DN, Karkkainen M;
XX
DR WPI; 2001-007762/02.
DR N-PSDB; AAC68953.
XX
PT Screening a human for an increased risk of developing lymphatic
PT disorder comprises assaying nucleic acid for alterations in the
PT sequences expressing vascular endothelial growth factor receptor-4
XX
PS Disclosure; Pages 62-63; 99pp; English.
XX
CC The present invention relates to a method for screening a human subject
CC for an increased risk of developing a lymphatic disorder e.g. hereditary
CC lymphedoema. The method comprises assaying nucleic acid of a human
CC subject to determine a presence or an absence of a mutation altering the
CC sequence or expression of vascular endothelial growth factor receptor-3
CC (VEGFR-3)/tms-like tyrosine kinase 4 (Flt4) allele (see AAC68952 and
CC AAB37604) and determining an increased risk of developing lymphatic
CC disorder from presence or absence of the mutation. The presence of a
CC mutation altering the encoded amino acid sequence or expression of at
CC least 1 VEGFR-3 allele in the nucleic acid correlates with an increased
CC risk of developing a lymphatic disorder. Treatment for hereditary
CC lymphedoema can be provided through the administration of vascular
CC endothelial growth factor C (VEGF-C) and vascular endothelial growth
CC factor D VEGF-D genes (via gene therapy) and proteins. The present
CC sequence is the protein sequence for VEGF-C.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 2336; DB 22; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.1e-172;
Matches 419; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db 1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy 61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db 61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy 121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db 121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy 181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db 181 lsktlfeitvplsqgpkpvtistfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy 241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
Db 241 ktcptnymwnnhicrclaqedfmfssdaggdstdgfhdicgpnkeldeetcqcvcragir 300

Qy 301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
Db 301 pascgphkeldrnscqcvckniifpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy 361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db 361 ectespqkcillkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419

RESULT 10
AAW13833
ID AAW13833 standard; Protein; 419 AA.
XX
AC AAW13833;
XX
DT 05-JUN-1997 (first entry)

```
XX
DE   Human vascular endothelial growth factor related protein VRP.
XX
KW   Vascular endothelial growth factor related protein, VRP, VEGF,
KW   receptor protein tyrosine kinase; Flt4; signal transduction;
KW   wound healing; vulnerary; rheumatoid arthritis; Kaposi's sarcoma;
KW   therapy; diagnosis; angiogenesis; monoclonal antibody.
XX
OS   Homo sapiens.
XX
FH   Key                 Location/Qualifiers
FT   Peptide             1..20
FT                       /label= Sig peptide
FT   Protein             20..419
FT                       /label= Mat protein
FT   Misc difference     114
FT                       /note= "deduced residue from nucleotide sequence
FT                              is tyrosine"
XX
PN   WO9709427-A1.
XX
PD   13-MAR-1997.
XX
PF   30-AUG-1996;   96WO-US14075.
XX
PR   08-SEP-1995;   95US-0003491.
XX
PA   (GETH ) GENENTECH INC.
XX
PI   Lee J,  Wood W;
XX
DR   WPI; 1997-192902/17.
DR   N-PSDB; AAT59929.
XX
PT   Human protein similar to vascular endothelial growth factor - used
PT   to treat e.g. wounds, tumours, rheumatoid arthritis, Kaposi's
PT   sarcoma etc.
XX
PS   Claim 6; Fig 1A-D; 68pp; English.
XX
CC   A human vascular endothelial growth factor (VEGF) related protein
CC   (VRP) (AAW13833) has been identified that binds to, and stimulates
CC   the phosphorylation of, the receptor tyrosine kinase Flt4.  It is
CC   postulated to be a third member of the VEGF protein family.  Its
CC   amino acid sequence was deduced from a cDNA clone (AAT59929) obtd.
CC   from a glioma G61 library.  Recombinant VRP can be produced in
CC   transformed host cells and used: to promote growth of vascular and
CC   lymph endothelial cells; to stimulate phosphorylation of the
CC   tyrosine kinase domain of a Flt4 receptor; as a diagnostic; as an
CC   additive to cell cultures; to screen for (ant)agonists; and to
CC   raise monoclonal antibodies used to treat conditions associated
CC   with excessive neovascularisation or vascular permeability.  VRP
CC   may make it possible to avoid coronary by pass surgery by
CC   stimulating growth of the collateral circulation.
XX
SQ   Sequence   419 AA;

  Query Match             99.6%;  Score 2327;  DB 18;  Length 419;
  Best Local Similarity   99.8%;  Pred. No. 5.6e-172;
  Matches  418;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db         61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahtnteilk 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419

RESULT 11
AAY30518
ID   AAY30518 standard; Protein; 419 AA.
XX
AC   AAY30518;
XX
DT   16-NOV-1999  (first entry)
XX
DE   Vascular endothelial growth factor 2 (VEGF 2).
XX
KW   Human vascular endothelial growth factor 2; VEGF 2;
KW   vascular endothelial cell growth; endothelial cell migration;
KW   angiogenesis; blood pressure; blood flow; immune system disorder;
KW   immune cell; cancer; autoimmune disorder; blood protein disorder;
KW   ataxia telangiectasia; common variable immunodeficiency;
KW   Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW   leukocyte adhesion deficiency syndrome; lymphopenia;
KW   phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW   Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW   allergy; asthma; allergic asthma.
XX
OS   Homo sapiens.
XX
PN   WO9946364-A1.
XX
PD   16-SEP-1999.
XX
PF   10-MAR-1999;   99WO-US05021.
XX
PR   13-MAR-1998;   98US-0042105.
PR   30-JUN-1998;   98US-0107997.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Cao L,  Hu J;
XX
DR   WPI; 1999-551399/46.
DR   N-PSDB; AAZ10523.
XX
PT   New human vascular endothelial growth factor 2, used for treating, e.g.
PT   immune disorders and cancers -
XX
PS   Claim 12; Fig 1A-E; 222pp; English.
XX
CC   The present sequence represents vascular endothelial growth factor 2
CC   (VEGF 2). The VEGF-2 polypeptides have activities similar to VEGF. The
CC   VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,
CC   stimulate endothelial cell migration, stimulate angiogenesis, decrease
CC   blood pressure, and increase blood flow. The polynucleotides and
CC   polypeptides can be used for preventing, treating or ameliorating a
CC   medical condition. The VEGF-2 polypeptides or polynucleotides may be
CC   useful in treating deficiencies or disorders of the immune system, by
CC   activating or inhibiting the proliferation, differentiation, or
CC   mobilization (chemotaxis) of immune cells. The etiology of these immune
CC   deficiencies or disorders may be genetic, somatic, such as cancer or
```

CC Some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
CC infectious. Examples of immunologic deficiency syndromes include blood
CC protein disorders, ataxia telangiectasia, common variable
CC immunodeficiency, Digeorge syndrome, HIV infection, HTLV-BLV infection,
CC leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
CC bactericidal dysfunction, severe combined immunodeficiency (SCIDs),
CC Wiskott Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.
CC They can also be used to modulate emostatic or thrombolytic activity.
CC Similarly allergic reactions and conditions such as asthma (particularly
CC allergic asthma) or other respiratory problems, may also be treated.
XX
SQ Sequence 419 AA;

Query Match 99.6%; Score 2426; DB 20; Length 419;
Best Local Similarity 99.5%; Pred. No. 6.7e-172;
Matches 417; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MHLIGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db 1 mhslqttsvacsllaaallpgpreapaaaaafesgldlsdaepdaqeatayaskdleeql 60

Qy 61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db 61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy 121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db 121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnsegLqcmntstsy 180

Qy 181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db 181 lskTlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy 241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
Db 241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcragLr 300

Qy 301 PASCGPKKELERNSCQCVCKNTFPQPQCGANPERENETCECRDGPDKECAC 360
Db 301 pascgpkkeldrnscqcvcknTfpqpqcganperenetcecrdgpdkecac 360

Qy 361 PCTESPQKCLLRGKKHHQTDSCYRSRLYNRQKACEPMCPPVSGYEFVCGCVPSYWKRPQMS 419
Db 361 pctespqkclLrgkkhhqtdscyrsrlynrqkacepmcppvsgyefvcgcvpsywkrpqms 419

RESULT 12
AAY22320
ID AAY22320 standard; Protein; 419 AA.
XX
AC AAY22320;
XX
DT 22-SEP-1999 (first entry)
XX
DE Full length human VEGF2 protein sequence.
XX
KW VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW endothelia; cell proliferation; tissue damage; therapy.
XX
OS Homo sapiens.
XX
PN US5935540-A.
XX
PD 03-AUG-1999.
XX
PF 24-DEC-1997; 97US-0999811.
XX
PR 24-DEC-1997; 97US-0999811.
PR 08-MAR-1994; 94US-0207559.
PR 06-JUN-1995; 95US-0465968.
XX
PA (HUMA) HUMAN GENOME SCI INC.
XX
PI Cao L, Hu J, Rosen CA;
XX
DR WPI; 1999-443606/37.
DR N-PSDB; AAX84837.
XX
PT Vascular endothelial growth factor 2 for wound healing and vascular
PT repair
XX
PS Claim 1; Fig 1; 49pp; English.
XX
CC This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC of the invention. The isolated polypeptide is useful for stimulating
CC angiogenesis, by promoting the proliferation of endothelial cells, for
CC the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ Sequence 419 AA;

Query Match 99.6%; Score 2426; DB 20; Length 419;
Best Local Similarity 99.5%; Pred. No. 6.7e-172;
Matches 417; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

Qy 1 MHLIGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db 1 mhslqttsvacsllaaallpgpreapaaaaafesgldlsdaepdaqeatayaskdleeql 60

Qy 61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db 61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy 121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db 121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnsegLqcmntstsy 180

Qy 181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db 181 lskTlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy 241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
Db 241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcragLr 300

Qy 301 PASCGPKKELERNSCQCVCKNTFPQPQCGANPERENETCECRDGPDKECAC 360
Db 301 pascgpkkeldrnscqcvcknTfpqpqcganperenetcecrdgpdkecac 360

Qy 361 PCTESPQKCLLRGKKHHQTDSCYRSRLYNRQKACEPMCPPVSGYEFVCGCVPSYWKRPQMS 419
Db 361 pctespqkclLrgkkhhqtdscyrsrlynrqkacepmcppvsgyefvcgcvpsywkrpqms 419

RESULT 13
AAY97144
ID AAY97144 standard; Protein; 419 AA.
XX
AC AAY97144;
XX
DT 22-DEC-2000 (first entry)
XX
DE Vascular endothelial growth factor 2 (VEGF 2).
XX
KW Vascular endothelial growth factor 2; VEGF 2; retina; angiogenesis;
KW treatment; injury; degeneration; photoreceptors; eye;
KW angioid streaks; retinitis pigmentosa; human;
KW age-related macular degeneration; diabetic retinopathy.
XX
OS Homo sapiens.
XX
PN WO200045845-A1.
XX
PD 10-AUG-2000.
XX

```
PF   07-FEB-2000; 2000WO-US003647.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA ) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Alderson R,  Melder R,  Rosschke V,  Ruben SM;
XX
DR   WPI; 2000-553862/48.
DR   N-PSDB; AAA52080.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF 2)
XX
PS   Claim 61; Fig 1a-e; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age related macular degeneration, diabetic retinopathy,
CC   etc. VEGF 2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   419 AA;


  Query Match             99.6%;  Score 2426;  DB 21;  Length 419;
  Best Local Similarity   99.5%;  Pred. No. 6.7e-172;
  Matches  417;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
           || ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mhslqttsvarcsllaaallpqpreapaaaaatesqldlsdaepdageatayaskdleeql 60

Qy      61 RAVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahyntеilk 120

Qy     121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180

Qy     181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     181 lskttfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy     241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy     301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     301 pasqgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy     361 ECTESPQFCLLEGKRKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||:|||
Db     361 ectespqfcllegkrkfhhqtcscyrrpctnrqkacepgfsysеevcrcvpsywkrpqms 419


RESULT  14
AAY07570
ID   AAY07570 standard; protein; 419 AA.
XX
AC   AAY07570;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF B protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious disease; neurodegeneration;
KW   vascular endothelial growth factor-B; VEGF B.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US014925.
XX
PR   03-JUN-1999;   99US-0137796.
XX
PA   (HUMA ) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Ruben SM,  Hu J,  Cao L;
XX
DR   WPI; 2001-071057/08.
DR   N-PSDB; AAA91004.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease
XX
PS   Claim 11; Fig 1; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor-B (VEGF-B),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and for repair of vascular tissue,
CC   especially peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (ant)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin), and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease or haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   419 AA;


  Query Match             99.6%;  Score 2426;  DB 22;  Length 419;
  Best Local Similarity   99.5%;  Pred. No. 6.7e-172;
  Matches  417;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
           || ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 mhslqttsvarcsllaaallpqpreapaaaaatesqldlsdaepdageatayaskdleeql 60

Qy      61 RAVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahyntеilk 120

Qy     121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     121 sidnewrktqcmprevcidvgkefgvatntffkppcvsvyrcggccnseglqcmntstsy 180
```

```
Qy    181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy    241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy    301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy    361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419
```

RESULT 15
AAW75751
ID   AAW75751 standard; Protein; 419 AA.
XX
AC   AAW75751;
XX
DT   14-DEC-1998 (first entry)
XX
DE   Vascular endothelial growth factor C protein analogue.
XX
KW   Flt4; vascular endothelial growth factor C; vascular endothelial cell;
KW   lymphatic endothelial cell; myelopoiesis; angiogenesis; inflammation;
KW   lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
XX
OS   Synthetic.
XX
FH   Key   Location/Qualifiers
FT   Modified-site   156
FT   /note= "Xaa can be anything other than cysteine, or
FT   can be nothing"
XX
PN   WO9833917-A1.
XX
PD   06-AUG-1998.
XX
PF   02-FEB-1998;   98WO-US01973.
XX
PR   05-FEB-1997;   97US-0795430.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD.
XX
PI   Alitalo K, Joukov V;
XX
DR   WPI; 1998-437470/37.
XX
PT   New isolated vascular endothelial growth factor polypeptide(s) -
PT   used to develop products for treating, e.g. cancers, inflammation,
PT   oedema, granulocytopenia or for wound healing or tissue
PT   transplantation
XX
PS   Example 35; Page 143-145; 177pp; English.
XX
CC   The vascular endothelial growth factor C (VEGF-C) polypeptides have
CC   activities affecting growth and migration of vascular endothelial cells,
CC   promoting growth of lymphatic endothelial cells and lymphatic vessels,
CC   increasing vascular permeability, and affecting myelopoiesis. The
CC   products can be used for stimulating angiogenesis, for inhibiting
CC   angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
CC   of inflammation, oedema, elephantiasis, or Milroy's disease. They can
CC   also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC   They can also be used for modulating the growth of endothelial cells.
CC   They can also be used to stimulate lymphocyte production and maturation,
CC   and to promote or inhibit trafficking of leucocytes between tissues and
CC   lymphatic vessels or to affect migration in and out of the thymus.
XX
SQ   Sequence   419 AA;

  Query Match   99.5%; Score 2325; DB 19; Length 419;
  Best Local Similarity   99.8%; Pred. No. 8e-172;
  Matches 418; Conservative   0; Mismatches   1; Indels   0; Gaps   0;

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Qy      1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 mhllgffsvacsllaaallpgpreapaaaaafesgldlsdaepdageatayaskdleeql 60

Qy     61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 rsvssvdelmtvlypeywkmykcqlrkggwqhnreqanlnsrteetikfaaahynteilk 120

Qy    121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
          ||||||||||||||||||||||||||||||||||| ||||||||||||||||||||||||
Db    121 sidnewrktqcmprevcidvgkefgvatntffkppxvsvyrcggccnseglqcmntstsy 180

Qy    181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    181 lsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrqvhsiirrslpatlpqcqaan 240

Qy    241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    241 ktcptnymwnnhicrclaqedfmfssdagddstdgfhdicgpnkeldeetcqcvcraglr 300

Qy    301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    301 pascgphkeldrnscqcvcknklfpsqcganrefdentcqcvckrtcprnqplnpgkcac 360

Qy    361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    361 ectespqkcllkgkkfhhqtcscyrrpctnrqkacepgfsyseevcrcvpsywkrpqms 419
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Search completed: December 26, 2001, 11:28:07
Job time: 3220 sec

us-09-534-376a-8.rai

Wed Dec 26 12:34:05 2001

GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 10:57:57 ; Search time 70.86 Seconds
(without alignments)
133.063 Million cell updates/sec

Title: US-09-534-376A-8
Perfect score: 2336
Sequence: 1 MHLLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWKRPQMS 419

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 212252 seqs, 22504292 residues

Total number of hits satisfying chosen parameters: 212252

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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6: /cgn2_6/ptodata/2/iaa/backfile1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2336	100.0	419	4	US-08-795-430-8	Sequence 8, Appli
2	2336	100.0	419	4	US-08-510-133A-35	Sequence 35, Appl
3	2426	99.6	419	2	US-08-999-811-2	Sequence 2, Appli
4	2426	99.6	419	3	US-09-042-105-2	Sequence 2, Appli
5	2326	99.6	419	3	US-09-042-105-18	Sequence 18, Appl
6	2320	99.3	419	5	PCT-US96-09001-2	Sequence 2, Appli
7	2048	87.7	415	4	US-08-795-430-11	Sequence 11, Appl
8	1999	85.6	350	4	US-08-510-133A-33	Sequence 33, Appl
9	1999	85.6	350	4	US-08-585-895-33	Sequence 33, Appl
10	1995	85.4	350	2	US-08-999-811-4	Sequence 4, Appli
11	1995	85.4	350	3	US-08-824-996-2	Sequence 2, Appli
12	1995	85.4	350	3	US-09-042-105-4	Sequence 4, Appli
13	1804.5	77.2	418	4	US-08-795-430-13	Sequence 13, Appl
14	704.5	30.2	425	4	US-08-915-795-3	Sequence 3, Appli
15	704.5	30.2	454	4	US-08-915-795-5	Sequence 5, Appli
16	704.5	30.1	358	4	US-08-915-795-8	Sequence 8, Appli
17	667.5	28.6	321	4	US-08-915-795-9	Sequence 9, Appli
18	238.5	10.2	242	2	US-08-999-811-7	Sequence 7, Appli
19	238.5	10.2	232	3	US-08-807-992B-4	Sequence 4, Appli
20	238.5	10.2	232	3	US-09-042-105-7	Sequence 7, Appli
21	238	10.2	231	5	PCT-US96-09001-10	Sequence 10, Appl
22	235.5	10.1	232	2	US-08-824-996-9	Sequence 9, Appli
23	228.5	9.8	214	6	5240848-11	Patent No. 524084
24	226	9.7	215	3	US-08-807-992B-3	Sequence 3, Appli
25	226	9.7	215	4	US-08-586-039B-49	Sequence 49, Appl
26	226	9.7	215	6	5240848-7	Patent No. 524084
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28	222	9.5	191	3	US-08-807-992B-2	Sequence 2, Appli
29	222	9.5	191	4	US-08-691-794-2	Sequence 66, Appl
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31	222	9.5	215	6	5432671-4	Patent No. 521974
32	221.5	9.3	165	6	5219739-22	Patent No. 519459
33	217.5	9.3	165	6	5194596-18	Patent No. 521973
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35	210	8.8	190	4	US-08-469-427A-15	Sequence 31, Appl
36	206.5	8.8	214	4	US-08-586-039B-45	Sequence 45, Appl
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39	202.5	8.7	164	6	5219739-17	Patent No. 521973
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41	202.5	8.5	190	2	US-08-564-064C-20	Sequence 20, Appl
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ALIGNMENTS

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RESULT 1
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; Sequence 8, Application US/08795430
; Patent No. 6130071
; GENERAL INFORMATION:
;   APPLICANT: Alitalo, Kari
;   APPLICANT: Joukov, Vladimir
;   TITLE OF INVENTION: Vascular Endothelial Growth Factor C (VEGF-C)
;   TITLE OF INVENTION: Protein and Gene, Mutants Thereof, and Uses Thereof
;   NUMBER OF SEQUENCES: 57
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;     STREET: 6300 Sears Tower, 233 South Wacker Drive
;     CITY: Chicago
;     STATE: Illinois
;     COUNTRY: United States of America
;     ZIP: 60606-6402
;   COMPUTER READABLE FORM:
;     MEDIUM TYPE: Floppy disk
;     COMPUTER: IBM PC compatible
;     OPERATING SYSTEM: PC-DOS/MS-DOS
;     SOFTWARE: PatentIn Release #1.0, Version #1.30
;   CURRENT APPLICATION DATA:
;     APPLICATION NUMBER: US/08/795,430
;     FILING DATE:
;     CLASSIFICATION: 435
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: PCT/FI96/00427
;     FILING DATE: 01-AUG-1996
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: 08/671,573
;     FILING DATE: 28-JUN-1996
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: 08/601,132
;     FILING DATE: 14-FEB-1996
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: 08/585,895
;     FILING DATE: 12-JAN-1996
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: 08/510,133
;     FILING DATE: 01-AUG-1995
;   PRIOR APPLICATION DATA:
;     APPLICATION NUMBER: 08/340,011
;     FILING DATE: 14-NOV-1994
;   ATTORNEY/AGENT INFORMATION:
;     NAME: Cass, David A.
;     REGISTRATION NUMBER: 38,153
;     REFERENCE/DOCKET NUMBER: 28967/33691
;   TELECOMMUNICATION INFORMATION:
;     TELEPHONE: 312/474 6300
;
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;       TELEFAX:  412/474 6448
;       TELEX:  25 3856
;   INFORMATION FOR SEQ ID NO:  8:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-534-376A-8


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  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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; Patent No. 6221839
;   GENERAL INFORMATION:
;       APPLICANT: Alitalo, Kari
;                  Joukov, Vladimir
;       TITLE OF INVENTION: Receptor Ligand
;       NUMBER OF SEQUENCES: 35
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;            STREET: 6300 Sears Tower, 233 South Wacker Drive
;            CITY: Chicago
;            STATE: Illinois
;            COUNTRY: United States of America
;            ZIP: 60606-6402
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.25
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/08/534,376A
;            FILING DATE: 01-Aug-1995
;            CLASSIFICATION: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Gass, David A.
;            REGISTRATION NUMBER: 38,154
;            REFERENCE/DOCKET NUMBER: 28114/32863
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 312/474-6300
;            TELEFAX: 312/474-0448
;            TELEX: 25-3856
;   INFORMATION FOR SEQ ID NO:  35:
;     SEQUENCE CHARACTERISTICS:
;            LENGTH: 419 amino acids
;            TYPE: amino acid
;            TOPOLOGY: linear
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 35:
US-08-534-376A-35


  Query Match             100.0%;  Score 2336;  DB 4;  Length 419;
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; Sequence 2, Application US/08999811
; Patent No. 5932540
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING SHAN
;    APPLICANT:  KOSEN, CRAIG A.
;    APPLICANT:  CAO, LIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/999,811
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
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;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8-MAR-1994
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06-JUN-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  MARKOWICZ, KAREN R.
;      REGISTRATION NUMBER:  36,351
;      REFERENCE/DOCKET NUMBER:  1488.1000004
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202)371-2600
;      TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-042-811-2

  Query Match              99.6%;  Score 2326;  DB 2;  Length 419;
  Best Local Similarity    99.5%;  Pred. No. 1.4e-201;
  Matches  417;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

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; Sequence 2, Application US/09042105
; Patent No. 6040157
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING-SHAN
;    APPLICANT:  ROSEN, CRAIG A.
;    APPLICANT:  CAO, LIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  25
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/042,105
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8-MAR-1994
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06-JUN-1995
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  TO BE ASSIGNED
;      FILING DATE:  24-DEC-1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  ERIC K. STEFFE
;      REGISTRATION NUMBER:  36,688
;      REFERENCE/DOCKET NUMBER:  1488.1000003/EKS
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202)371-2600
;      TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-042-105-2

  Query Match              99.6%;  Score 2326;  DB 3;  Length 419;
  Best Local Similarity    99.5%;  Pred. No. 1.4e-201;
  Matches  417;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
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Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
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Db        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180

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RESULT     5
US-09-042-105-18
; Sequence 18, Application US/09042105
; Patent No. 6040157
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;   GENERAL INFORMATION:
;     APPLICANT:  HU, JING SHAN
;     APPLICANT:  ROSEN, CRAIG A.
;     APPLICANT:  CAO, LIANG
;     TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;     NUMBER OF SEQUENCES:  35
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;       STREET:  1100 NEW YORK AVENUE
;       CITY:  WASHINGTON
;       STATE:  DC
;       COUNTRY:  USA
;       ZIP:  20005
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/09/042,105
;       FILING DATE:  HEREWITH
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/207,550
;       FILING DATE:  8 MAR 1994
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/465,968
;       FILING DATE:  06 JUN 1995
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  TO BE ASSIGNED
;       FILING DATE:  24 DEC 1997
;       CLASSIFICATION:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  ERIC K. STEFFE
;       REGISTRATION NUMBER:  36,688
;       REFERENCE/DOCKET NUMBER:  1488.106US0C/EKS
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (202)371-2600
;       TELEFAX:  (202)371-2540
;   INFORMATION FOR SEQ ID NO:  18:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-09-042-105-18

  Query Match             99.6%;  Score 2326;  DB 3;  Length 419;
  Best Local Similarity   99.5%;  Pred. No. 1.4e-201;
  Matches  417;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              || |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MHSLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWERPQMS 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||||:||||||
Db        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 419

RESULT   6
PCT-US96-09001-2
; Sequence 2, Application PC/TUS9609001
;   GENERAL INFORMATION:
;     APPLICANT:  HU, ET AL.
;     TITLE OF INVENTION:  Human Vascular EndothelialGrowth Factor 2
;     NUMBER OF SEQUENCES:  10
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  CARELLA, BYRNE, BAIN, GILFILLAN,
;       ADDRESSEE:  CECCHI, STEWART & OLSTEIN
;       STREET:  6 BECKER FARM ROAD
;       CITY:  ROSELAND
;       STATE:  NEW JERSEY
;       COUNTRY:  USA
;       ZIP:  07068
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  3.5 INCH DISKETTE
;       COMPUTER:  IBM PS/2
;       OPERATING SYSTEM:  MS-DOS
;       SOFTWARE:  WORD PERFECT 5.1
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  PCT/US96/09001
;       FILING DATE:
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/465,968
;       FILING DATE:  6 JUN 95
;       APPLICATION NUMBER:  08/207,550
;       FILING DATE:  8 MAR 1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  FERRARO, GREGORY D.
;       REGISTRATION NUMBER:  36,134
;       REFERENCE/DOCKET NUMBER:  325800-288
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  201-994-1700
;       TELEFAX:  201-994-1744
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 AMINO ACIDS
;       TYPE:  AMINO ACID
;       STRANDEDNESS:
;       TOPOLOGY:  LINEAR
;     MOLECULE TYPE:  PROTEIN
PCT-US96-09001-2

  Query Match             99.3%;  Score 2320;  DB 5;  Length 419;
  Best Local Similarity   99.3%;  Pred. No. 5e-201;
  Matches  416;  Conservative    1;  Mismatches    2;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              || |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MHSLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSVSSVDELMTVKYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
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Qy        181 LSKILFEIIVPLSQGPKPVIISFANHISCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSKILFEIIVPLSQGPKPVIISFANHISCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240

Qy        241 K[illegible]PINYMWNNHICRCLAQEDEMESSDAGDDSIDGFHDICGPNKELDEEICQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 K[illegible]PTNYMWNNHICRCLAQEDEMFSSDAGDDSIDGFHDICGPNKELDEEICQCVCRAGLR 300

Qy        301 PAS[illegible]GPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PAS[illegible]GPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 419
```

RESULT 7
US-08-795-430-11
; Sequence 11, Application US/08795430
; Patent No. 6130071
; GENERAL INFORMATION:
; APPLICANT: Alitalo, Kari
; APPLICANT: Joukov, Vladimir
; TITLE OF INVENTION: Vascular Endothelial Growth Factor C (VEGF-C)
; TITLE OF INVENTION: Protein and Gene, Mutants Thereof, and Uses Thereof
; NUMBER OF SEQUENCES: 57
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
; STREET: 6300 Sears Tower, 233 South Wacker Drive
; CITY: Chicago
; STATE: Illinois
; COUNTRY: United States of America
; ZIP: 60606-6402
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/795,430
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/FI96/00427
; FILING DATE: 01 AUG-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/671,573
; FILING DATE: 28 JUN-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/601,132
; FILING DATE: 14-FEB-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/585,895
; FILING DATE: 12-JAN-1996
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/510,133
; FILING DATE: 01-AUG-1995
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: 08/340,011
; FILING DATE: 14-NOV-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Gass, David A.
; REGISTRATION NUMBER: 38,153
; REFERENCE/DOCKET NUMBER: [illegible]
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312/474-6300
; TELEFAX: 312/474-0448
; TELEX: 25-3856
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 415 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-795-430-11

Query Match 87.7%; Score 2048; DB 4; Length 415;
Best Local Similarity 85.4%; Pred. No. 1.5e-176;
Matches 358; Conservative 28; Mismatches 29; Indels 4; Gaps 1;

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Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              |||| | |:||||||||:| |||||  ||||||  |:|||| ||  |:  |||||||
Db          1 MHLLCFLSLACSLLAAALIPSPREAPATVAAFESGLGFSEAEPDGGEVKAFEGKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||:||||:||||||||||||||||      |  ||:||  :::||||||||||
Db         61 RSVSSVDELMSVLYPDYWKMYKCQLRKGGWQ----QPTLNTRTGDSVKFAAAHYNTEILK 116

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              |||||||||||||||||||||||||| :||||||||||||||||||||||||||||| |
Db        117 SIDNEWRKTQCMPREVCIDVGKEFGAATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTGY 176

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        177 LSKILFEIIVPLSQGPKPVIISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 236

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              |||||||:|| ::|||||||:||:| |:  ||||:|||:|||||||||||:||||||: ||
Db        237 KTCPTNYVWNNYMCRCLAQQDFIYSNVEDDSTNGFHDVCGPNKELDEDTCQCVCKGGLR 296

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              |:||||||||||:|||||||||||: ||||||||||||||||||||||||||||||||||
Db        297 PSSCGPHKELDRDSCQCVCKNKLFPNSCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 356

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              ||||: |||  ||||||||||||||||||| || |  |:|| |:||||||||||||| ::
Db        357 ECTENTQKCFLKGKKFHHQTCSCYRRPCANRLKHCDPGLSFSEEVCRCVPSYWKRPHLN 415
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RESULT 8
US-08-510-133A-33
; Sequence 33, Application US/08510133A
; Patent No. 6221839
; GENERAL INFORMATION:
; APPLICANT: Alitalo, Kari
; Joukov, Vladimir
; TITLE OF INVENTION: Receptor Ligand
; NUMBER OF SEQUENCES: 35
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
; STREET: 6300 Sears Tower, 233 South Wacker Drive
; CITY: Chicago
; STATE: Illinois
; COUNTRY: United States of America
; ZIP: 60606-6402
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/510,133A
; FILING DATE: 01-Aug-1995
; CLASSIFICATION: Unknown
; ATTORNEY/AGENT INFORMATION:
; NAME: Gass, David A.
; REGISTRATION NUMBER: 38,153
; REFERENCE/DOCKET NUMBER: [illegible]32863
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 312/474-6300
; TELEFAX: 312/474-0448
; TELEX: 25-3856
; INFORMATION FOR SEQ ID NO: 33:
; SEQUENCE CHARACTERISTICS:

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;           LENGTH: 350 amino acids
;           TYPE: amino acid
;           TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 33:
US-08-510-133A-33

  Query Match             85.6%;  Score 1999;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-172;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         70 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60

Qy        130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy        190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy        250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy        310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy        370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 350


RESULT 9
US-08-585-895-33
; Sequence 33, Application US/08585895
; Patent No. 6245530
;  GENERAL INFORMATION:
;    APPLICANT: Alitalo, Kari
;    APPLICANT: Joukov, Vladimir
;    TITLE OF INVENTION: Receptor Ligand
;    NUMBER OF SEQUENCES: 35
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET: 6300 Sears Tower, 233 South Wacker Drive
;      CITY: Chicago
;      STATE: Illinois
;      COUNTRY: United States of America
;      ZIP: 60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible
;      OPERATING SYSTEM: PC-DOS/MS-DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/08/585,895
;      FILING DATE:
;      CLASSIFICATION: 514
;    ATTORNEY/AGENT INFORMATION:
;      NAME: Gass, David A.
;      REGISTRATION NUMBER: 38,153
;      REFERENCE/DOCKET NUMBER: [illegible]
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE: 312/474-6300
;      TELEFAX: 312/474-0448
;      TELEX: 25-3856
;  INFORMATION FOR SEQ ID NO: 33:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH: 350 amino acids
;      TYPE: amino acid
;      TOPOLOGY: linear
;    MOLECULE TYPE: protein
US-08-585-895-33

  Query Match             85.6%;  Score 1999;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 3.2e-172;
  Matches  350;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         70 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60

Qy        130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy        190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy        250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy        310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy        370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              ||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 350


RESULT 10
US-08-999-811-4
; Sequence 4, Application US/08999811
; Patent No. 5932540
;  GENERAL INFORMATION:
;    APPLICANT: HU, JING-SHAN
;    APPLICANT: ROSEN, CRAIG A.
;    APPLICANT: CAO, LIANG
;    TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES: 15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET: 1100 NEW YORK AVENUE
;      CITY: WASHINGTON
;      STATE: DC
;      COUNTRY: USA
;      ZIP: 20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible
;      OPERATING SYSTEM: PC-DOS/MS-DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/08/999,811
;      FILING DATE: HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER: US 08/207,550
;      FILING DATE: 8-MAR-1994
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER: US 08/465,968
;      FILING DATE: 06-JUN-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME: MARKOWITZ, KAREN R.
;      REGISTRATION NUMBER: 36,351
;      REFERENCE/DOCKET NUMBER: 1488.1000004
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (202)371-2600
```

; TELEFAX: (202)371-2540
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 350 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-999-811-4

Query Match 85.4%; Score 1995; DB 2; Length 350;
Best Local Similarity 99.7%; Pred. No. 7.3e-172;
Matches 349; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 70 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
Db 1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60

Qy 130 QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
Db 61 QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy 190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
Db 121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy 250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
Db 181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy 310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
Db 241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy 370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db 301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350

RESULT 11
US-08-824-996-2
; Sequence 2, Application US/08824996B
; Patent No. 5935820
; GENERAL INFORMATION:
; APPLICANT: Hu, Jing-Shan
; APPLICANT: Rosen, Craig A.
; APPLICANT: Cao, Liang
; TITLE OF INVENTION: Polynucleotides Encoding Vascular Endothelial Growth
; TITLE OF INVENTION: Factor 2
; FILE REFERENCE: PF1201
; CURRENT APPLICATION NUMBER: US/08/824,996B
; CURRENT FILING DATE: 1997-03-27
; EARLIER APPLICATION NUMBER: 08/207,550
; EARLIER FILING DATE: 1994-03-08
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
; LENGTH: 350
; TYPE: PRT
; ORGANISM: Homo sapiens
US-08-824-996-2

Query Match 85.4%; Score 1995; DB 2; Length 350;
Best Local Similarity 99.7%; Pred. No. 7.3e-172;
Matches 349; Conservative 1; Mismatches 0; Indels 0; Gaps 0;

Qy 70 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
Db 1 MTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60

Qy 130 QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
Db 61 QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy 190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
Db 121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy 250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
Db 181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy 310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
Db 241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy 370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db 301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350

RESULT 12
US-09-042-105-4
; Sequence 4, Application US/09042105
; Patent No. 6040157
; GENERAL INFORMATION:
; APPLICANT: HU, JING-SHAN
; APPLICANT: ROSEN, CRAIG A.
; APPLICANT: CAO, LIANG
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR 2
; NUMBER OF SEQUENCES: 35
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX
; STREET: 1100 NEW YORK AVENUE
; CITY: WASHINGTON
; STATE: DC
; COUNTRY: USA
; ZIP: 20005
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/09/042,105
; FILING DATE: HEREWITH
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/207,550
; FILING DATE: 8-MAR-1994
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/465,968
; FILING DATE: 06-JUN-1995
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: TO BE ASSIGNED
; FILING DATE: 24-DEC-1997
; CLASSIFICATION:
; ATTORNEY/AGENT INFORMATION:
; NAME: ERIC K. SIEFFE
; REGISTRATION NUMBER: 36,688
; REFERENCE/DOCKET NUMBER: 1488.1000003/EKS
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202)371-2600
; TELEFAX: (202)371-2540
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 350 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-042-105-4

Db 61 QCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy 190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
Db 121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy 250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
Db 181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy 310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
Db 241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy 370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db 301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350

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  Query Match             85.4%;  Score 1995;  DB 3;  Length 350;
  Best Local Similarity   99.7%;  Pred. No. 7.3e-172;
  Matches  349;  Conservative    1;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         70 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 129
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKT 60

Qy        130 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 189
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy        190 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 249
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMW 180

Qy        250 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 309
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 NNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE 240

Qy        310 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 369
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 LDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCACECTESPQKC 300

Qy        370 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
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Db        301 LLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWQRPQMS 350


RESULT 13
US-08-795-430-13
; Sequence 13, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;    TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;    NUMBER OF SEQUENCES:  57
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,430
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/FI96/00427
;      FILING DATE:  01 AUG 1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/671,573
;      FILING DATE:  28 JUN 1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/601,132
;      FILING DATE:  14 FEB 1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/585,895
;      FILING DATE:  12 JAN 1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/510,133
;      FILING DATE:  01 AUG 1995
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/340,011
;      FILING DATE:  14 NOV 1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  28967/33691
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-3856
;  INFORMATION FOR SEQ ID NO:  13:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  418 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-430-13

  Query Match             77.2%;  Score 1804.5;  DB 4;  Length 418;
  Best Local Similarity   75.7%;  Pred. No. 1.3e-154;
  Matches  318;  Conservative   39;  Mismatches   60;  Indels    3;  Gaps    3;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
Db          1 MHLLEMLSLGCCLAAGAVLLGPRQ-PPVAAAYESGHGYYEEEPGAGEPKAHASKDLEEQL 59

Qy         61 RSVSSVDELMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
Db         60 RSVSSVDELMIVLYPEYWKMFKCQLRKGGWQHNREHSSSDTRSDDSLKFAAAHYNAEILK 119

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
Db        120 SIDSEWRKTQCMPREVCVDLGKEFGATTNTFFKPPCVSIYRCGGCCNSEGLQCMNISTNY 179

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
Db        180 ISKTLFEITVPLSHGPKPVTVSFANHTSCRCMSKLDVYRQVHSIIRRSLPATQTQCHVAN 239

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGD-DSTDGFHDICGPNKELDEETCQCVCRAGL 299
Db        240 KTCPKNHVWNNQICRCLAQHDFGFSSHLGDSDTSEGFH-DICGPNKELDEETCQCVCKGGV 298

Qy        300 RPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCA 359
Db        299 RPTSCGPHKELDRASCQCMCKNKLFPSQCGNNREFDENTCQCVCKRTCLRNQHLNPAKCT 358

Qy        360 CECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
Db        359 CECTESPNKCILKGKKFHHQTCSCYEFPCTVFTFRQGACFLLAEEVCRCVKTSWKRPLMN 418


RESULT 14
US-08-915-795-3
; Sequence 3, Application US/08915795
; Patent No. 6235713
;  GENERAL INFORMATION:
;    APPLICANT:  Marc G. ACHEN
;    APPLICANT:  Andrew F. WILKS
;    APPLICANT:  Steven A. STACKER
;    APPLICANT:  Kari ALITALO
;    TITLE OF INVENTION:  GROWTH FACTOR
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;      STREET:  1200 G Street, NW, Suite 700
;      CITY:  Washington
;      STATE:  DC
;      COUNTRY:  United States of America
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
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;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/08/915,795
;      FILING DATE:
;      CLASSIFICATION: 536
;    ATTORNEY/AGENT INFORMATION:
;      NAME: EVANS, Joseph D.
;      REGISTRATION NUMBER: 26,269
;      REFERENCE/DOCKET NUMBER: 1064/42983
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (202) 628-8800
;      TELEFAX: (202) 628-8844
;      TELEX: N/A
;  INFORMATION FOR SEQ ID NO: 4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH: 325 amino acids
;      TYPE: amino acid
;      STRANDEDNESS: single
;      TOPOLOGY: linear
;    MOLECULE TYPE: protein
;    HYPOTHETICAL: NO
;    ORIGINAL SOURCE:
;      TISSUE TYPE: Human Breast
US-08-915-795-4

  Query Match             30.2%;  Score 704.5;  DB 4;  Length 325;
  Best Local Similarity   38.9%;  Pred. No. 1.1e-55;
  Matches  140;  Conservative   61;  Mismatches   88;  Indels   71;  Gaps   11;

Qy         57 EEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 114
              |:|:|: ||::||: : : | ||:::|:||          :    ::||  :  : :||| |
Db         12 EQQIRAASSLEELLRIIHSEDWKLWRCRLRL------KSFTSMDSRSASHRSTRFAATFY 65

Qy        115 NTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 174
              : | || |  |::||| ||| |::|  | | :||||||||||:|:|||||| | | ||
Db         66 DIEILKVIDEEWQRTQCSPRETCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICM 125

Qy        175 NTSTSYISKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLP 234
              |||||:|| ||||:|||:  |: | :  |||| |:|:        |  :||||||:    :|
Db        126 NTSTSYISKQLFEISVPLTSVPELVPVKVANHTGCKCLPTAP--RHPYSIIRRSI-QIP 181

Qy        235 Q--CQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETC 291
              :   |  : | || : :|::: |:|: ||          ::   |   |      :  | |
Db        182 EEDRCSHSKKLCPIDMLWDSNKCKCVLQE---------ENPLAGTED---HSHLQE--- 225

Qy        292 QCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQ 351
                       || ||||                           |||: |:||||  ||::
Db        226 ------PALCGPH------------------------MMFDEDRCECVCKTPCPKDL 252

Qy        352 PLNPGKCACECTESPQKCLLKGKKFHHQTCSC------YRRPCTNRQKACEPGFSYSEE 404
                :|  |:| || || : |  | | ||  ||||        : ||| : : ||      : :|
Db        253 IQHPKNCSCFECKESLETCCQKHKLFHPDTCSCEDRCPFHTRPCASGKTACAKHCRFPKE 312

RESULT 15
US-08-915-795-5
; Sequence 5, Application US/08915795
; Patent No. 6235713
;  GENERAL INFORMATION:
;    APPLICANT: Marc G. ACHEN
;    APPLICANT: Andrew F. WILKS
;    APPLICANT: Steven A. STACKER
;    APPLICANT: Kari ALITALO
;    TITLE OF INVENTION: GROWTH FACTOR
;    NUMBER OF SEQUENCES: 11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE: Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;      STREET: 1200 G Street, NW, Suite 700
;      CITY: Washington
;      STATE: DC
;      COUNTRY: United States of America
;      ZIP: 20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE: Floppy disk
;      COMPUTER: IBM PC compatible
;      OPERATING SYSTEM: PC-DOS/MS DOS
;      SOFTWARE: PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: US/08/915,795
;      FILING DATE:
;      CLASSIFICATION: 536
;    ATTORNEY/AGENT INFORMATION:
;      NAME: EVANS, Joseph D.
;      REGISTRATION NUMBER: 26,269
;      REFERENCE/DOCKET NUMBER: 1064/42983
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE: (202) 628-8800
;      TELEFAX: (202) 628-8844
;      TELEX: N/A
;  INFORMATION FOR SEQ ID NO: 5:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH: 354 amino acids
;      TYPE: amino acid
;      STRANDEDNESS: single
;      TOPOLOGY: linear
;    MOLECULE TYPE: protein
;    HYPOTHETICAL: NO
;    ORIGINAL SOURCE:
;      TISSUE TYPE: Human Lung
US-08-915-795-5

  Query Match             30.2%;  Score 704.5;  DB 4;  Length 354;
  Best Local Similarity   38.9%;  Pred. No. 1.2e-55;
  Matches  140;  Conservative   61;  Mismatches   98;  Indels   71;  Gaps   11;

Qy         57 EEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 114
              |:|:|: ||::||: : : | ||:::|:||          :    ::||  :  : :||| |
Db         41 EQQIRAASSLEELLRIIHSEDWKLWRCRLRL------KSFTSMDSRSASHRSTRFAATFY 94

Qy        115 NTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 174
              : | || |  |::||| ||| |::|  | | :||||||||||:|:|||||| | | ||
Db         95 DIEILKVIDEEWQRTQCSPRETCVEVASELGKSTNTFFKPPCVNVFRCGGCCNEESLICM 154

Qy        175 NTSTSYISKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLP 234
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Db        155 NTSTSYISKQLFEISVPLTSVPELVPVKVANHTGCKCLPTAP--RHPYSIIRRSI-QIP 210

Qy        235 Q--CQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETC 291
              :   |  : | || : :|::: |:|: ||          ::   |   |      :  | |
Db        211 EEDRCSHSKKLCPIDMLWDSNKCKCVLQE---------ENPLAGTED---HSHLQE--- 254

Qy        292 QCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQ 351
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Db        255 ------PALCGPH------------------------MMFDEDRCECVCKTPCPKDL 281

Qy        352 PLNPGKCACECTESPQKCLLKGKKFHHQTCSC------YRRPCTNRQKACEPGFSYSEE 404
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Db        282 IQHPKNCSCFECKESLETCCQKHKLFHPDTCSCEDRCPFHTRPCASGKTACAKHCRFPKE 341


Search completed: December 26, 2001, 11:29:32
Job time: 1895 sec
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GenCore version 4.5

SM protein - protein search, using sw model

Run on: December 26, 2001, 11:23:52 ; Search time 76.78 Seconds
(without alignments)
415.696 Million cell updates/sec

Title: US-09-534-376A-8
Perfect score: 2346
Sequence: 1 MHLLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWKRPQMS 419

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2346	100.0	419	2	S69207	vascular endotheli
2	269	11.5	1700	2	S08167	Bulbiani ring 3 pr
3	238.5	10.2	232	2	A41551	vascular endotheli
4	218.5	9.4	190	2	S52130	vascular endotheli
5	207.5	8.9	190	2	B44881	vascular endotheli
6	207.5	8.9	214	2	A44881	glioma-derived vas
7	206.5	8.8	190	2	A35987	vascular endotheli
8	205.5	8.8	190	2	B40080	adhesive plaque pr
9	182.5	7.8	473	2	A56175	185K secretory pro
10	180.5	7.7	160	2	JQ0542	vascular endotheli
11	175	7.5	188	2	JC4680	ovine vascular end
12	173.5	7.4	146	2	S57956	vascular endotheli
13	172.5	7.4	120	2	A33787	tenascin precursor
14	172.5	7.4	1810	1	A32230	16K vascular endot
15	160	6.8	148	2	D49530	vascular endotheli
16	159.5	6.8	133	2	B49530	notch protein - fr
17	158	6.8	2703	1	A24420	tenascin precursor
18	157.5	6.7	1746	1	S19694	cell-fate determin
19	157.5	6.7	2471	2	A49129	laminin alpha 5 ch
20	157	6.7	3635	2	I10053	fibrillin-2 precur
21	155.5	6.7	2918	2	A54105	jagged protein pre
22	155	6.6	1220	2	A56136	fibrillin-2 precur
23	154.5	6.6	2907	2	A57278	hypothetical prote
24	154	6.6	1372	2	T25933	transmembrane prot
25	154	6.6	2437	2	S42612	Notch homolog prot
26	153.5	6.6	2352	2	T30201	Xotch protein - Af
27	152.5	6.5	2524	2	A45844	tenascin-like prot
28	151.5	6.5	782	2	A61625	placental growth f
29	151	6.5	149	2	A41236	Notch 3 protein -
30	150.5	6.4	1203	2	A49175	hypothetical prote
31	149.5	6.4	1187	2	T18455	tenascin-C - human
32	149	6.4	2201	2	A32160	fibrillin-1 precur
33	149	6.4	2871	2	A55624	fibrillin 1 precur
34	149	6.4	3002	2	A47221	vascular endotheli
35	148.5	6.4	207	2	JC4679	fibrillin 1 - bovi
36	148.5	6.4	2871	2	A55567	slit-1 protein hom
37	147.5	6.3	1531	2	T42218	notch4 - mouse
38	147.5	6.3	1964	2	T09099	notch3 protein - h
39	147.5	6.3	2321	2	S78549	notch homolog - se
40	146	6.2	2531	2	T31070	hypothetical prote
41	145.5	6.2	565	2	T16408	MEGF6 protein - ra
42	145	6.2	1574	2	T13954	placental growth 1
43	144	6.2	158	2	A56125	von Willebrand fac
44	144	6.2	2813	1	VWHU	probable tenascin
45	144	6.2	4006	2	T09070	Notch 3 protein -

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N;Alternate names: Flt4 ligand DHM
C;Species: Homo sapiens (man)
C;Date: 27-Apr-1996 #sequence_revision 01-Nov-1996 #text_change 08-Oct-1999
C;Accession: S69207, S61795; S71443; S69208; G02659
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksel
EMBO J. 15, 1751, 1996
A;Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand
A;Reference number: S69207; MUID:96203094
A;Accession: S69207
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-419 <JOU>
A;Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A;Note: only a part of the translation is shown
A;Note: this is a revision to the sequence from reference S61795
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksol
EMBO J. 15, 290-298, 1996
A;Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4
A;Reference number: S61795; MUID:96178224
A;Accession: S61795
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 70-419 <JOU1>
A;Note: this sequence has been revised in reference S69207
A;Accession: S71443
A;Molecule type: protein
A;Residues: 'X',104-120 <JOU2>
R;Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A;Description: Vascular endothelial growth factor related protein (VRP): A ligand and
A;Reference number: S69208
A;Accession: S69208
A;Molecule type: mRNA
A;Residues: 1-419 <LEE>
A;Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R;Morris, J.C.
submitted to the EMBL Data Library, May 1996
A;Reference number: H01557
A;Accession: G02659
A;Status: preliminary; translated from GP/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-419 <MOR>
A;Cross-references: EMBL:U58111; NID:g1374426; PIDN:AAB02909.1; PID:g1374427
C;Genetics:
A;Gene: GDB:VEGFC; VRP
A;Cross-references: GDB:3890883; OMIM:601528
F;1-12/Domain: signal sequence #status predicted <SIG>
F;13-102/Domain: propeptide #status predicted <PRO>

F;103-419/Product: vascular endothelial growth factor C #status experimental <MAT>

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  Query Match             100.0%;  Score 2336;  DB 2;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-164;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
```

RESULT 2
S08167
Balbiani ring 3 protein - midge (Chironomus tentans)
C;Species: Chironomus tentans
C;Date: 30 Sep 1991 #sequence_revision 30 Sep 1991 #text_change 21 Jul 2000
C;Accession: S08167
R;Paulsson, G.; Lendahl, U.; Galli, J.; Ericsson, C.; Wieslander, L.
J. Mol. Biol. 211, 331-349, 1990
A;Title: The Balbiani ring 3 gene in Chironomus tentans has a diverged repetitive struct
A;Reference number: S08167; MUID:90172404
A;Accession: S08167
A;Status: not compared with conceptual translation
A;Molecule type: DNA
A;Residues: 1-1700 <PAU>
A;Cross-references: GB:X52263; NID:g7057; PIDN:CAA36506.1; PID:g7058
C;Genetics:
A;Gene: BR3
A;Map position: 4
C;Superfamily: unassigned Balbiani ring proteins

```
  Query Match             11.0%;  Score 257;  DB 2;  Length 1700;
  Best Local Similarity   22.8%;  Pred. No. 5.1e-11;
  Matches   89;  Conservative   47;  Mismatches  145;  Indels  110;  Gaps   18;

Qy         79 KMYKCQLRK      GGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPR 134
              |  ||: |      || ::|::             :||            || |   :     |     |
Db        727 KPCKCKCSKCMPCCENNKKW          GKCTCVCPQKNPCTAEKV     WDAKTCG    775

Qy        135 EVCIDVGKEFGVATNTFFKPPCVSVYRCGG           CCNSEGLQCMNTSTSYLSKTL 166
                ||                      ||:   :|          ||   :  ::           :: :  :
Db        776    CT                      CVNPPKCNSPQVLKPTCCCCQNVEKCKAPQKPT ENPC 815

Qy        167 EITVPLSQGPKPVTISFANHTSCRCMSKLDV           YRQVHSIIRRSLPATLPQCQA 238
              :   |   :  |    :          | |  :     '           : :|         :  |    | |
Db        816 DCACPNKKCKAPLVWCCKTPCVCPNCACMKCCCKEWNKVPCPCQCNPPK   PTA    871
```

```
Qy        239 ANKTCPTNYMWNNHICRC    LAQEDFMFSSDAGDDSTDGFHDICG PNKELD           287
                     ||      |  :  |:|      | | |         ||         :  |     || |:  :||
Db        872 ---CPGTQKWMDDKCKCGCPNAQCTDC   -AGGKKFNDPTCSCCTPSGKLPCTCNTKW 922

Qy        288 -EETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKR- 345
                   ||| |  |   |         :||    |    :  |  |||  ||||        :  |  :  |  ::  :||:||||
Db        923 SAKTCTCGCCGDVNKNCGNLKNCNCSCQCPKNKQLMANCESTKWNYCCCKCVCENA 980

Qy        346                                  TCPRNQPLNPGKCACECTESPQKCLLKGKKFHH 378
                                               |||  |:          |:|||            :  :||||::
Db        981 DDSDDCVKPQIWLPPQCKCCCPASAQMCPANKRFTFKSCSCPCKSPMPSPTPQCKKWNE 1040

Qy        379 QTCSCYRRPCTNRQKACEPGFSYSEEVCRCV 409
                 |          | |    | ||       :  :    |:|:
Db       1041 DKCVV    ECAN VKTCEGPQRWCDNQCKCT 1067
```

RESULT 3
A41551
vascular endothelial growth factor 206 precursor - human
N;Alternate names: vascular permeability factor
N;Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189; VE
C;Species: Homo sapiens (man)
C;Date: 28 Aug 1992 #sequence_revision 28 Aug 1992 #text_change 05-Nov-1999
C;Accession: A41551; C41551; B41551; A40454; B40454; C40454; A40079; A40080; JQ1463;
R;Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A;Title: The vascular endothelial growth factor family: identification of a fourth mo
A;Reference number: A41551; MUID:92168017
A;Accession: A41551
A;Molecule type: mRNA
A;Residues: 1-232 <HOU>
A;Cross-references: GB:S85192; NID:g246155; PID:g246156
A;Accession: C41551
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 <HOU2>
A;Accession: B41551
A;Status: nucleic acid sequence not shown, not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-141,227-232 <HOU>
R;Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.;
J. Biol. Chem. 266, 11947-11954, 1991
A;Title: The human gene for vascular endothelial growth factor. Multiple protein form
A;Reference number: A40454; MUID:91268072
A;Accession: A40454
A;Molecule type: DNA
A;Residues: 1-165,183-232 <TI1>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63976;
A;Accession: B40454
A;Molecule type: DNA
A;Residues: 1-140,'N',183-232 <TI2>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63977;
A;Accession: C40454
A;Molecule type: DNA
A;Residues: 1-141,227-232 <TI3>
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978
R;Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.
Science 246, 1309-1312, 1989
A;Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.
A;Reference number: A40079; MUID:90069609
A;Accession: A40079
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-165,183-232 <KEC>
A;Cross-references: GB:M27281; NID:g340306; PIDN:AAA36807.1; PID:g340301
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A;Reference number: A40080; MUID:90069608
A;Accession: A40080
A;Status: not compared with conceptual translation
A;Molecule type: mRNA

A;Residues: 1-140,'N',183-232 <LEU>
A;Cross-references: GB:M32977; NID:g181970; PIDN:AAA35789.1; PID:g181971
R;Weindel, K.; Marme, D.; Weich, H.A.
Biochem. Biophys. Res. Commun. 183, 1167-1174, 1992
A;Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endothelial
A;Reference number: JQ1463; MUID:92231879
A;Accession: JQ1463
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 <WEI>
A;Cross-references: EMBL:X62568; NID:g37658; PIDN:CAA44447.1; PID:g37659
A;Experimental source: AIDS-Kaposi's sarcoma cell
A;Accession: JQ1464
A;Molecule type: mRNA
A;Residues: 1-140,'N',227-232 <WE2>
A;Experimental source: AIDS-Kaposi's sarcoma cell
R;Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.; Hay
J. Biol. Chem. 264, 20017-20024, 1989
A;Title: Human vascular permeability factor. Isolation from U937 cells.
A;Reference number: A34492; MUID:90062112
A;Accession: A34492
A;Molecule type: protein
A;Residues: 27-36;43-49,'R';72-76,'Q',78-81;59-71 <CON>
C;Comment: The most common of several alternatively spliced forms is VEGF 165.
C;Genetics:
A;Gene: GDB:VEGF
A;Cross-references: GDB:132244; OMIM:192240
A;Map position: 6p21-6p12
C;Function:
A;Description: promotes fluid and protein leakage from blood vessels
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular pro
F;1-232/Product: vascular endothelial growth factor 206 precursor #status predicted <V20
F;1-232/Product: vascular endothelial growth factor 189 precursor #status predic
F;1-165,183-232/Product: vascular endothelial growth factor 121 precursor #status predic
F;1-141,227-232/Product: vascular endothelial growth factor <SIG>
F;1-26/Domain: signal sequence #status predicted
F;101/Binding site: carbohydrate (Asn) (covalent) #status predicted

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  Query Match             10.2%;  Score 238.5;  DB 2;  Length 232;
  Best Local Similarity   24.7%;  Pred. No. 1.6e-10;
  Matches   70;  Conservative   33;  Mismatches  101;  Indels   79;  Gaps   10;

Qy         69 LMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRK 128
                                                                      . .::
Db         14 LLLYLHHAKWSQAAPMAEGGGQNHH-----------EVVKFM----------- --DVYQR 49

Qy        129 IQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 188
Db         50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy        189 TVPLSQGPKPVIISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKICPTNYM 248
Db        110 KP--HQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVRGK----GKGQKRKRKKSRYKS 162

Qy        249 WNNHI-CRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGL-RPASCGP 306
Db        163 WSVYVGARC---------------------------------CLMPWSLPGPHPCGP 186

Qy        307 HKE-------LDRNSCQCVCKNKLFPSQCGANR-EFDENTCQC 341
Db        187 CSERRKHLFVQDPQTCKCSCKNT-DSRCKARQLELNERTCRC 227
```

RESULT 4
S52130
vascular endothelial growth factor - pig
C;Species: Sus scrofa domestica (domestic pig)
C;Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
C;Accession: S52130
R;Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
Biochim. Biophys. Acta 1260, 235-238, 1995
A;Title: Nucleotide sequence and expression of the porcine vascular endothelial growth f
A;Reference number: S52130; MUID:95143284
A;Accession: S52130
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-190 <SHA>
A;Cross-references: GB:X81380; NID:g587559; PIDN:CAA57143.1; PID:g587560

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  Query Match              9.4%;  Score 218.5;  DB 2;  Length 190;
  Best Local Similarity   23.3%;  Pred. No. 4e-09;
  Matches   62;  Conservative   25;  Mismatches   72;  Indels  107;  Gaps    8;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
Db         18 LHHAKWSQAAPMAEGDQKPHEVVKFM--- ---------DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKILFEITVPL-----SQGPKPV 199
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-------FNITMQIMRIKPHQGQHIG 117

Qy        200 TISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQ 259
Db        118 EMSFLQHNKCECRPKKDRARQ---------------------------------- 138

Qy        260 EDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKEL  DRNSCQ 316
Db        139 -----------------ENPCGPCSE--------------------RRKHLFVQDPQTCK 161

Qy        317 CVCKNKLFPSQCGANR-EFDENTCQC 341
Db        162 CSCKNT -DSRCKARQLELNERTCRC 185
```

RESULT 5
B44881
vascular endothelial growth factor-1 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999
C;Accession: B44881; A43351; A61029
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenes
A;Reference number: A44881; MUID:92274860
A;Accession: B44881
A;Molecule type: mRNA
A;Residues: 1-190 <BRE>
A;Cross-references: GB:S38083; NID:g249858; PIDN:AAB22253.1; PID:g249859
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)
R;Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.
J. Biol. Chem. 267, 16317-16322, 1992
A;Title: Vascular endothelial growth factor. Regulation by cell differentiation and a
A;Reference number: A43351; MUID:92355593
A;Accession: A43351
A;Molecule type: mRNA
A;Residues: 1-116,'FR',119-190 <CLA>
A;Cross-references: GB:M95200, NID:g202350; PIDN:AAA40547.1; PID:g202351
A;Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)
R;Rosenthal, R.A.; Megyesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.
Growth Factors 4, 53-59, 1990
A;Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelia
A;Reference number: A61029; MUID:91197543
A;Accession: A61029
A;Molecule type: protein
A;Residues: 27-38 <ROS>
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein;

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  Query Match              8.9%;  Score 207.5;  DB 2;  Length 190;
  Best Local Similarity   22.7%;  Pred. No. 2.6e-08;
  Matches   59;  Conservative   28;  Mismatches   78;  Indels   95;  Gaps    8;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
Db         18 LHHAKWSQAAPTIEGEQKSHEVIKFM-------------DVYQRSYCRPIETLVDIFQEY 64
```

```
Qy        145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTIS 202
                         ||| ||  : || |||| | |:|: || |  ::   :  |      ||  |       :|
Db         65 PDEIEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG     EMS 120

Qy        203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
                |  |: |  |  | |                             :| |       ||    |   :
Db        121 FLQHSRCECRPKKD                               RTKP      ENHCEPCSERRKH 151

Qy        263 MFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNK 322
                :|   |                                                  :|:| |||
Db        152 LFVQDP                                       ----       QTCKCSCKNT 167

Qy        323 LFPSQCGANR-EFDENTCQC 341
                    |:| |  :  | :| ||:|
Db        168    DSRCKARQLELNERTCRC 185


RESULT     6
A44881
vascular endothelial growth factor 3 precursor - mouse
N;Contains: vascular endothelial growth factor 2; vascular permeability factor
C;Species: Mus musculus (house mouse)
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 08-Oct-1999
C;Accession: A44881; C44881; A60932; S52136
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A;Reference number: A44881; MUID:92274860
A;Accession: A44881
A;Molecule type: mRNA
A;Residues: 1-214 <BRE>
A;Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)
A;Accession: C44881
A;Molecule type: mRNA
A;Residues: 1-140,209-214 <BR2>
A;Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861
A;Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)
R;Claffey, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan, Y.C.
J. Exp. Med. 172, 1535-1545, 1990
A;Title: Vascular permeability factor: a tumor-derived polypeptide that induces endothel
A;Reference number: A60932; MUID:91079755
A;Accession: A60932
A;Molecule type: protein
A;Residues: 27-33 <CLA>
R;Sugihara, T.; Kaul, S.C.; Mitsui, Y.; Wadhwa, R.
Biochim. Biophys. Acta 1224, 365-370, 1994
A;Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous im
A;Reference number: S52136; MUID:95101726
A;Accession: S52136
A;Status: preliminary
A;Molecule type: protein
A;Residues: 27-46 <SUG>
C;Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
C;Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homodimer;
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-214/Product: vascular endothelial growth factor 3 #status experimental <MAT>


  Query Match             8.9%;  Score 207.5;  DB 2;  Length 214;
  Best Local Similarity   22.7%;  Pred. No. 2.9e-08;
  Matches   59;  Conservative   32;  Mismatches   98;  Indels   71;  Gaps    7;

Qy         85 EEKPCWLHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
                 :      |                 :: | |||                 : :::: | | |   :|: :|:
Db         18 LHHAKWSQAAPTTEGEQKSHEVIKFM                   DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTIS 202
                         ||| ||  : || |||| | |:|: || |  ::   :  |      ||  |       :|
Db         65 PDEIEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG -  EMS 120
```

```
Qy        203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
                |  |: | |  | |  :      :|           : |    :           |: |   |  :
Db        121 FLQHSRCECRPKKDPRTKPEEKSVRGK    GKGQKRKRKKSRFKSWSVHCEPCSERRKH 175

Qy        263 MFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNK 322
                :|   |                                                  :|:| |||
Db        176 LFVQDP              -------   -   -------          QTCKCSCKNT 191

Qy        323 LFPSQCGANR-EFDENTCQC 341
                    |:| |  :  | :| ||:|
Db        192 - DSRCKARQLELNERTCRC 209


RESULT     7
A35987
glioma-derived vascular endothelial cell growth factor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
C;Accession: A35987
R;Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Ho
Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
A;Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is
A;Reference number: A35987; MUID:90207249
A;Accession: A35987
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-190 <CON>
A;Cross-references: GB:M32167; NID:g204287; PIDN:AAA41211.1; PID:g204288


  Query Match             8.8%;  Score 206.5;  DB 2;  Length 190;
  Best Local Similarity   24.5%;  Pred. No. 3.1e-08;
  Matches   62;  Conservative   31;  Mismatches   71;  Indels   89;  Gaps   10;

Qy         92 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 151
                |: :  :          :|      |      ||      |::| :|    ::::  | |  |     :|: :|:
Db         19 HHAKWSQAAPTTEGEQK  -AH    EVVKFMD VYQRSYCRPIETLVDIFQEYPDEIEYI 71

Qy        152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTISFANHTSC 209
                ||| ||  : || |||| | |:|: || |  ::   :  |      ||  |       :||  |: |
Db         72 FKPSCVPLMRCAGCCNDEALECVPTSESNVTMQIMRIKPHQSQHIG     EMSFLQHSRC 127

Qy        210 RCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAG 269
                 |  |  |                              :| |          ||    |   :    :|   |
Db        128 ECRPKKD                    -------   RTKP       ENHCEPCSERRKHLFVQDP 157

Qy        270 DDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCG 329
                                                                 :|:| |||     |:|
Db        158            - - --- -----------          -----    QTCKCSCKNT-DSRCK 172

Qy        330 ANR-EFDENTCQC 341
                | :  |  :| ||:|
Db        173 ARQLELNERTCRC 185


RESULT     8
B40080
vascular endothelial growth factor precursor (version 2) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 05-Nov-1999
C;Accession: B40080; B33787; A33255
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A;Reference number: A40080; MUID:90069608
A;Accession: B40080
A;Molecule type: mRNA
A;Residues: 1-190 <LEU>
A;Cross-references: GB:M32976; NID:g163006; PIDN:AAA30502.1; PID:g163007
R;Fischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet-derived gro
A;Reference number: A33787; MUID:90121225
```

A;Accession: B33787
A;Molecule type: mRNA
A;Residues: 27-190 <TIS>
A;Cross-references: GB:M31836; NID:g163808; PIDN:AAA30804.1; PID:g163809
R;Ferrara, N.; Henzel, W.J.
Biochem. Biophys. Res. Commun. 161, 851-858, 1989
A;Title: Pituitary follicular cells secrete a novel heparin-binding growth factor specif
A;Reference number: A33255; MUID:89286596
A;Accession: A33255
A;Molecule type: protein
A;Residues: 27-31 <FER>
C;Keywords: alternative splicing; glycoprotein
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-190/Product: vascular endothelial growth factor #status predicted <MAT>
F;100/Binding site: carbohydrate (Asn) (covalent) #status predicted

Query Match 8.8%; Score 205.5; DB 2; Length 190;
Best Local Similarity 22.8%; Pred. No. 3.6e-08;
Matches 60; Conservative 25; Mismatches 77; Indels 101; Gaps 8;

Qy 85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
Db 18 LHHAKWSAAIMAECQQKPHEVVKFM------------DVYQRSFCRPIETLVDIFQEY 64

Qy 145 GVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 202
Db 65 FDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMS 120

Qy 203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
Db 121 FLQHNKCECRPKKDKARQ---- 138

Qy 263 MFSSDAGDDSTDGFPHDICGPNKELDEETCQCVCRAGLRPASCGPHKEL-- DRNSCQCVC 319
Db 139 ----------ENPCGPCSE----------RRKHLFVQDPQTCKCSC 164

Qy 320 KNKLFPSQCGANR-EFDENTCQC 341
Db 165 KNT -DSRCKARQLELNERTCRC 185

RESULT 9
A56175
adhesive plaque protein Mytp2 precursor - Mediterranean mussel
C;Species: Mytilus galloprovincialis (Mediterranean mussel)
C;Date: 27-Apr-1995 #sequence_revision 03-Oct 1995 #text_change 11-Jan-2000
C;Accession: A56175
R;Inoue, K.; Takeuchi, Y.; Miki, D.; Odo, S.
J. Biol. Chem. 270, 6698-6701, 1995
A;Title: Mussel adhesive plaque protein gene is a novel member of epidermal growth facto
A;Reference number: A56175; MUID:95204464
A;Accession: A56175
A;Molecule type: mRNA
A;Residues: 1-473 <INO>
A;Cross-references: GB:D43794; NID:g602767; PIDN:BAA07852.1; PID:g1008438; PID:g602768
C;Superfamily: unassigned EGF-related proteins; EGF homology
C;Keywords: duplication
F;1-17/Domain: signal sequence #status predicted <SIG>
F;337-419/Domain: EGF homology <EGF1>
F;429-460/Domain: EGF homology <EGF>
F;23,36,43,56,75,382,424,455,468,473/Modified site: 3',4'-dihydroxyphenylalanine (Tyr) #

Query Match 7.8%; Score 182.5; DB 2; Length 473;
Best Local Similarity 21.9%; Pred. No. 4.4e-06;
Matches 100; Conservative 37; Mismatches 127; Indels 193; Gaps 27;

Qy 81 YKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDV 140
Db 67 YKC-FCKGGYY ----------GYNC --NLKNACKPNQCKNKSRCVPV 100

Qy 141 GKEFG-VAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPV 199
Db 101 GKTFKCVCKNGNFCRLCEKNVCSPNPCKNNG-KC-----SPLGKTGYKCTCS-------- 146

Qy 200 TISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQ-CQAANKTCP---TNYMWNNHICR 255
Db 147 ----GGYTGPRC--------EVH--------ACKPNPCKNKGRCFEDGKTGYK ----CR 181

Qy 256 CL-------AQEDFMF---SSDAGDDSTDGFHD---------------------ICGPNKELDE 288
Db 182 CVDGYSGPTCQEHACEPNPCSNGGTCSADKFGDTSCDCRDGYTGEFCERYVCAPNPCKNG 241

Qy 289 ETC--------QCVCRAGLRPASC-------GPHKELDR - NSCQCVCKNKLFPSQC 328
Db 242 GICSSDCSCCYPGPCKGGYSGPTCKVNVCKPTPCKNSGRCVNKGSSYNCICKGGYSGPTC 301

Qy 329 GAN-- -------REFDENT-----CQCV-------CK---RTCPRNQFLNPGKC---- 358
Db 302 GENVCKPNPCQNKGKCYFDNSDDCPCPCVDGYKGPTCEEDKFNPCNTKPCKNGGKCNYNG 361

Qy 359 ---ACECT-----------------------ESPQKCLLKGKKF----------HHQTC 381
Db 362 KITTCKCATGWEGFHCTDKAYEPNFCVVSKPCKNGGKCIWNGKAYPCKCAYGYGGRHCTK 421

Qy 382 SGYR-- - RPCTNRQKACEPGFSYSEEVCRCVPSY 412
Db 422 KSYEENPCAGRTCKNRCKCTNRGNGY---VCKCARGY 455

RESULT 10
JQ0542
185K secretory protein - midge (Chironomus tentans) (fragment)
N;Alternate names: balbiani ring 3 protein
C;Species: Chironomus tentans
C;Date: 31-Dec 1991 #sequence_revision 31-Dec-1991 #text_change 17-Mar-2000
C;Accession: JQ0542
R;Dignam, S.S.; Case, S.T.
Gene 88, 133-140, 1990
A;Title: Balbiani ring 3 in Chironomus tentans encodes a 185-kDa secretory protein wh
A;Reference number: JQ0542; MUID:90269600
A;Accession: JQ0542
A;Molecule type: mRNA
A;Residues: 1-160 <DIG>
A;Cross-references: GB:M24160
A;Experimental source: salivary gland
C;Superfamily: unassigned Balbiani ring proteins

Query Match 7.7%; Score 180.5; DB 2; Length 160;
Best Local Similarity 26.4%; Pred. No. 2.1e-06;
Matches 48; Conservative 24; Mismatches 77; Indels 43; Gaps 9;

Qy 243 CPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPA 302
Db 3 CKSPRQWTDSKCLC--------ECSTIPAICEGKQTWCG-------EACQCICPGG -DK 45

Qy 303 SCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRT-------CPRNQFLNP 355
Db 46 NCGNKKEFDKPSCECKCKNN--PSI--SPQVWDADKCLCKCTEDFQKPQQGCIMGQKWND 101

Qy 356 GKCACECTESPQKCLIKGKKFHHQTCGCTERPCTNRQKACEPGFSYSEEVCRC-VPSYWK 414
Db 102 RVCSCGCPVPRPDC-TNGQIYNITCAC---GCGTDKPSCKQGTYNWKDGVCKCPCPNGMK 157

Qy 415 RP 416
Db 158 EP 159

RESULT 11
JC4680
vascular endothelial growth factor-related factor 167 precursor - mouse
N;Alternate names: VRF 167 protein
C;Species: Mus musculus (house mouse)

```
C;Date: 10 May 1996 #sequence_revision 19 Jul 1996 #text_change 05-Nov-1999
C;Accession: JC4680
R;Townson, S.; Lagercrantz, J.; Grimmond, S.; Silins, G.; Nordenskjoeld, M.; Weber, G.;
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A;Title: Characterization of the murine VEGF related factor gene.
A;Reference number: JC4679; MUID:96183052
A;Accession: JC4680
A;Molecule type: mRNA
A;Residues: 1-188 <TOW>
A;Cross-references: GB:U43837; NID:g1314335; PIDN:AAC52553.1; PID:g1314336
C;Comment: This factor is a mitogen, that is selective for endothelial cells, and belong
ar endothelial growth factors 167 and VEGF 186.
C;Genetics:
A;Gene: Vrf
A;Map position: 19
A;Introns: 137/2
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-188/Product: vascular endothelial growth factor related factor #status predicted <M

  Query Match             7.5%;  Score 175;  DB 2;  Length 188;
  Best Local Similarity   26.5%;  Pred. No. 6.3e-06;
  Matches   53;  Conservative   27;  Mismatches   80;  Indels   40;  Gaps    8;

Qy        101 SPIEEII KFAAAHYNIEILKSIDNEWRKTQCMPREVCIDVGKEFGVAINIFFKPPCVSV 159
                 :||:  : :|     :  :::  ||    | | | |||| :  :  |            | ||:|
Db         17 ARTQAPVSQFDGPSHQKKVVPWIDVYARAT CQPREVVVPLSMELMGNVVKQLVPSCVTV 75

Qy        160 YRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYR 219
                 ||||||  :||:|: |      :     :   |   | ||   :      :|     |: |  |  |  |
Db         76 QRCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE   MSLEEHSQCECRPK    127

Qy        220 QVHSIIRRSLPATL PQCQAAN         KTCPTNYMWNNHICRCLAQEDFMESSDAGDDST 273
                  :  |  ::    |   |  |  |              :||                |||   :
Db        128 KKESAVKPDSPRILCPPCTQRRQRPDPRTCR               CRCRRRR               165

Qy        274 DGFHDICGPNKELDEETCQC 293
                    |       |     ||: :||:|
Db        166    FLHCQCRCLEENPDTCRC 183


RESULT 12
S57956
ovine vascular endothelial growth factor - sheep
C;Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 05-Nov-1999
C;Accession: S57956
R;Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.
submitted to the EMBL Data Library, July 1995
A;Reference number: S57956
A;Accession: S57956
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-146 <RED>
A;Cross-references: EMBL:X89506; NID:g899350; PIDN:CAA61677.1; PID:g899351


  Query Match             7.4%;  Score 173.5;  DB 2;  Length 146;
  Best Local Similarity   29.0%;  Pred. No. 6.3e-06;
  Matches   40;  Conservative   18;  Mismatches   61;  Indels   19;  Gaps    3;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNIEILKSIDNEWRKTQCMPREVCIDVGKEF 144
                 |     |       |    :   |  :||                        : ::::  |  |  |    :|: :|:
Db         18 LHHAKWSQAAPMAEGGQKPHEVMKFM                 DVYQRSFCRPIETLVDIFQEY 64

Qy        145 GVAINIFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ  GPKPVTIS 202
                            ||| ||  :  ||||||  |  |:|:  |      ::   :    |      ||    |        :|
Db         65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEESNITMQIMRIKPHQSQHIG     EMS 120

Qy        203 FANHTSCRCMSKLDVYRQ 220
                 |   |    |  |    |  |    ||
Db        121 FLQHNKCECRPKKDKARQ 138
```

```
RESULT 13
A33787
vascular endothelial growth factor (version 1) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 05-Nov-1999
C;Accession: A33787
R;Fischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet-derived gro
A;Reference number: A33787; MUID:90121225
A;Accession: A33787
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-120 <FIS>
A;Cross-references: GB:M33750; NID:g163810; PIDN:AAA30805.1; PID:g163811
C;Keywords: alternative splicing


  Query Match             7.4%;  Score 172.5;  DB 2;  Length 120;
  Best Local Similarity   34.9%;  Pred. No. 6.2e-06;
  Matches   37;  Conservative   18;  Mismatches   44;  Indels    7;  Gaps    3;

Qy        117 EILKSIDNEWRKTQCMPREVCIDVGKEFGVAINIFFKPPCVSVYRCGGCCNSEGLQCMNT 176
                 |::|  :|      ::::  |  |  |    :|:  :|:              ||| ||  :  ||||||  |  |:|: :
Db         12 EVVKFMDVYQRSFCRPIETLVDIFQEYPDEIEFIFKPSCVPLMRCGGCCNDESLECVPT 70

Qy        177 STSYLSKTLFEITVPLSQ  GPKPVTISFANHTSCRCMSKLDVYRQ 220
                          ::   :   |       ||  |          :||   |    |  |    |  |    ||
Db         71 EESNITMQIMRIKPHQSQHIG    EMSFLQHNKCECRPKKDKARQ 112


RESULT 14
A32230
tenascin precursor - chicken
N;Alternate names: cytotactin; hexabrachion
N;Contains: tenascin 190K; tenascin 200K
C;Species: Gallus gallus (chicken)
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 10-Sep-1999
C;Accession: A32230; B32230; A33379; B33379; C33379; S01292; A30903
R;Jones, F.S.; Hoffman, S.; Cunningham, B.A.; Edelman, G.M.
Proc. Natl. Acad. Sci. U.S.A. 86, 1905-1909, 1989
A;Title: A detailed structural model of cytotactin: protein homologies, alternative R
A;Reference number: A32230; MUID:89184536
A;Accession: A32230
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-1810 <JON>
A;Cross-references: GB:J04519; NID:g211717; PIDN:AAA48745.1; PID:g211718
A;Accession: B32230
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-1044,1318-1810 <JO2>
A;Cross-references: GB:J04519
R;Spring, J.; Beck, K.; Chiquet-Ehrismann, R.
Cell 59, 325-334, 1989
A;Title: Two contrary functions of tenascin: dissection of the active sites by recomb
A;Reference number: A33379; MUID:90030407
A;Accession: A33379
A;Status: preliminary; nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-204,'G',206-221,'A',223-380,'D',382-386,'H',388-444,'HN',447-450,'V',45
A;Cross-references: GB:M23121; NID:g212746; PIDN:AAA49086.1; PID:g212749
A;Accession: B33379
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual
A;Molecule type: mRNA
A;Residues: 1-204,'G',206-221,'A',223-380,'D',382-386,'H',388-444,'HN',447-450,'V',45
A;Accession: C33379
A;Status: preliminary; nucleic acid sequence not shown; not compared with conceptual
A;Molecule type: mRNA
A;Residues: 1-204,'G',206-221,'A',223-380,'D',382-386,'H',388-444,'HN',447-450,'V',45
A;Cross-references: GB:M23121
R;Pearson, C.A.; Pearson, D.; Shibahara, S.; Hofsteenge, J.; Chiquet-Ehrismann, R
```

EMBL: J. 7, 2977-2982, 1988
A;Title: Tenascin: cDNA cloning and induction by TGF-beta.
A;Reference number: S01292; MUID:89080589
A;Accession: S01292
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 27-181,'R',183-204,'G',206-221,'A',223-380,'D',382-386,'H',388-444,'HN',447-
A;Cross-references: EMBL:X08030
A;Note: part of this sequence was confirmed by protein sequencing
C;Superfamily: tenascin; EGF homology; fibrinogen beta/gamma homology; fibronectin type
C;Keywords: alternative splicing; calcium binding; cell adhesion; duplication; extracel
F;1-22/Domain: signal sequence #status predicted <SIG>
F;23-33/Domain: propeptide #status predicted <PRO>
F;34-1810/Product: tenascin 230K #status predicted <MAT>
F;223-274/Domain: EGF homology <EGF1>
F;316-342/Domain: EGF homology <EGF>
F;542-673/Domain: fibronectin type III repeat homology <FN3A>
F;681-765/Domain: fibronectin type III repeat homology <FN3B>
F;773-857/Domain: fibronectin type III repeat homology <FN3C>
F;865-949/Domain: fibronectin type III repeat homology <FN3D>
F;957-1037/Domain: fibronectin type III repeat homology <FN3E>
F;1046-1129/Domain: fibronectin type III repeat homology <FN3F>
F;1137-1219/Domain: fibronectin type III repeat homology <FN3G>
F;1228-1310/Domain: fibronectin type III repeat homology <FN3H>
F;1418-1499/Domain: fibronectin type III repeat homology <FN3I>
F;1507-1587/Domain: fibronectin type III repeat homology <FN3J>
F;1595-1675/Domain: fibronectin type III repeat homology <FN3K>
F;1676-1708/Domain: fibrinogen beta/gamma homology <FBG>
F;1734-1747/Domain: calcium binding #status predicted <CAB>

Query Match 7.4%; Score 172.5; DB 1; Length 1810;
Best Local Similarity 20.6%; Pred. No. 9e-05;
Matches 90; Conservative 43; Mismatches 126; Indels 177; Gaps 27;

Qy 52 ASKDLEEQLRSVSSVDELMTVLTPTYWKMYK--:FF:YW:HNPPQANL------NSRTEE 105
Db 115 AAPDIKDLLSRLEELEGLVSSL------------------REQCASGAGCCPNSQTAE 154

Qy 106 ----IIKEAAAH--YNTEILKSI-DNEWRKTQC----MPREVCIDVG---KEFGVATNTF 151
Db 155 GKLDIAPVCSGHGNYSTEIGGCVCEPGWKGPNCSEPACPRN CLNGGLCVEAKCHCPEGF 213

Qy 152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211
Db 214 TGEDC-SQARCPSDCNDQG-KCVD--------------------GVCVCPEGYTG--- 246

Qy 212 MSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHIC---------RCLAQEDF 262
Db 247 ---------------- ----PDC--GEELCP-------HGCGTHGRCVGGRCVCHEGF 275

Qy 263 MFSSDAGDDSTDGFHDICGPNKELDEETC---QCVCRAGLRPASCG----PHKELDRNSC 315
Db 276 -----IGEDCNE---PLC-PNNCHNRGRCVDNECVCDEGYTGEDCGELICPNDCFDRGRC 326

Qy 316 ---QCVCK------- NKLFPSQCCANREFDENTCQC------------VCKRTCPRNQ 351
Db 327 CNGICECEEGYTGEDCGELICPNNCNGHGTCENGLCVCHEGFVGDDCSQKRCPKTCNNPG 386

Qy 352 PLNPGKCAC------ ECTE--SPQKCLLKGKKFHHQTCSC------------------ 383
Db 387 RCVDGRCVCHEGYIGEDCGELRCPNDCHNRGRCINGQ-CVCDEGFTGEDCGELRCPNDCQ 445

Qy 384 YKRPCINRQKACEPGF 399
Db 446 QRGRCINGQCECHEGF 461

RESULT 15
D49530
16K vascular endothelial growth factor homolog A2R - ort virus
C;Species: ort virus
C;Date: 07-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 08-Oct-1999
C;Accession: D49530
R;Lyttle, D.J.; Fraser, K.M.; Fleming, S.B.; Mercer, A.A.; Robinson, A.J.
J. Virol. 68, 84-92, 1994
A;Title: Homologs of vascular endothelial growth factor are encoded by the poxvirus o
A;Reference number: A49530; MUID:94076465
A;Contents: NZ7
A;Accession: D49530
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-148 <LYT>
A;Cross-references: GB:S67522; NID:g456900; PIDN:AAB29223.1; PID:g456902
A;Note: sequence extracted from NCBI backbone (NCBIN:141422, NCBIP:141426)

Query Match 6.8%; Score 160; DB 2; Length 148;
Best Local Similarity 32.7%; Pred. No. 6.3e-05;
Matches 33; Conservative 15; Mismatches 43; Indels 10; Gaps 2;

Qy 124 NEWMKT-- QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTS 179
Db 35 NEWMKTLDKSQCKPPDIVVYTGEETPESTNLQYNPRCVIVKPCSGCCNGDGQICTAVETR 94

Qy 180 YLSKTLFEITVPLSQGPKP------VTISFANHTSCRCMSK 214
Db 95 NITVIVSVIGVVSSSSGTNPCVSTNLQRTSVTEHIKCDCIGR 135

Search completed: December 26, 2001, 11:31:02
Job time: 430 sec

GenCore version 4.5
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SW protein - protein search, using sw model

Run on: December 26, 2001, 11:29:37 ; Search time 40.89 Seconds
(without alignments)
375.705 Million cell updates/sec

Title: US-09-534-376A-8
Perfect score: 2346
Sequence: 1 MHLLGFFSVACSLLAAALLP.....SYSEEVCRCVPSYWKRPQMS 419

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	2346	100.0	419	1	VEGC_HUMAN	P49767 homo sapien
2	2048	87.7	415	1	VEGC_MOUSE	P97953 mus musculu
3	257	11.0	1700	1	BAR3_CHITE	P15692 homo sapien
4	226	9.7	215	1	VEGF_HUMAN	P49151 sus scrofa
5	218.5	9.4	190	1	VEGF_PIG	Q00731 mus musculu
6	207.5	8.9	214	1	VEGF_MOUSE	P16612 rattus norv
7	206.5	8.8	190	1	VEGF_RAT	P15691 bos taurus
8	205.5	8.8	190	1	VEGF_BOVIN	P26617 cavia porce
9	199.5	8.5	164	1	VEGF_CAVPO	Q25464 mytilus gal
10	182.5	7.8	473	1	FP2_MYTGA	P52582 gallus gall
11	178.5	7.6	216	1	VEGF_CHICK	P49765 homo sapien
12	175.5	7.5	188	1	VEGB_HUMAN	P49766 mus musculu
13	175	7.5	188	1	VEGB_MOUSE	P50412 ovis aries
14	173.5	7.4	146	1	VEGF_SHEEP	Q28833 sus scrofa
15	166.5	7.0	2482	1	VWF_PIG	P52584 orf virus (
16	162.5	7.0	133	1	VEGH_GREN2	P10039 gallus gall
17	160.5	6.9	1808	1	TENA_CHICK	P52585 orf virus (
18	160	6.8	148	1	VEGH_DROME	P07207 drosophila
19	158	6.8	2703	1	NOTC_DROME	Q29116 sus scrofa
20	157.5	6.7	1746	1	TENA_PIG	Q61001 mus musculu
21	157	6.7	3645	1	LMA5_MOUSE	Q28295 canis famil
22	156.5	6.7	2813	1	VWF_CANFA	P45556 homo sapien
23	155.5	6.7	2911	1	FBN2_HUMAN	Q61555 mus musculu
24	154.5	6.6	2907	1	FBN2_MOUSE	P46530 brachydanio
25	154	6.6	2437	1	NOTC_BRARE	P21783 xenopus lae
26	152.5	6.5	2524	1	NOTC_XENLA	P49763 homo sapien
27	150	6.4	170	1	PIGF_HUMAN	P24821 homo sapien
28	149	6.4	2201	1	TENA_HUMAN	P35555 homo sapien
29	149	6.4	2871	1	FBN1_HUMAN	Q61554 mus musculu
30	149	6.4	2871	1	FBN1_MOUSE	P98133 bos taurus
31	148.5	6.4	2871	1	FBN1_BOVIN	P31695 mus musculu
32	147.5	6.3	1964	1	NTC4_MOUSE	P46531 homo sapien
33	147	6.3	2444	1	NTC1_HUMAN	Q91V46 sus scrofa
34	145	6.2	2871	1	FBN1_PIG	P04275 homo sapien
35	144	6.2	2813	1	VWF_HUMAN	Q21313 caenorhabdi
36	143	6.1	3672	1	LM12_CAEEL	P40798 drosophila
37	142.5	6.1	1106	1	STC_DROME	O88799 mus musculu
38	142.5	6.1	5376	1	ZAN_MOUSE	P49764 mus musculu
39	142	6.1	158	1	PIGF_MOUSE	P14585 caenorhabdi
40	141.5	6.1	1429	1	LI12_CAEEL	Q61549 mus musculu
41	141	6.0	931	1	EMR1_MOUSE	Q01705 mus musculu
42	140	6.0	2581	1	NTC1_MOUSE	P10040 drosophila
43	139	6.0	2139	1	CRB_DROME	Q9NJ15 branchiosto
44	138	5.9	1696	1	PCK5_BRACL	Q02817 homo sapien
45	137	5.9	5179	1	MUC2_HUMAN	

ALIGNMENTS

RESULT 1
VEGC_HUMAN
ID VEGC_HUMAN STANDARD; PRT; 419 AA.
AC P49767;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
DE L).
GN VEGFC.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.
RX MEDLINE=96178224; PubMed-8617281;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RT "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
RT the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL EMBO J. 15:290-298(1996).
RN [2]
RP ERRATUM.
RX MEDLINE=96203094; PubMed-8612600;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RL EMBO J. 15:1751-1751(1996).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=96312526; PubMed-8700872;
RA Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;
RT "Vascular endothelial growth factor-related protein: a ligand and
RT specific activator of the tyrosine kinase receptor Flt4.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN [4]
RP SEQUENCE FROM N.A.
RA Fitz L., Morris J.C., Fowler P.S., Long A.J., Greco R.,
RA Burgess P., Giannotti J., Ciarletta A., Hennessey E., Kovacic S.,
RA Fitzgerald M., Scaltreto H., Welch N., Neben S., Finnerty H.,
RA Collner R., Wang J., Nickbarg E., Cassaway K., Turner K.,
RA Wood C.R.;
RL Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -!- SUBUNIT: HOMODIMER; DISULFIDE LINKED.
CC -!- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C-TERMINUS.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC ---
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CC
DR   EMBL; X94216; CAA63907.1; -.
DR   EMBL; U43142; AAA85214.1; -.
DR   EMBL; U58111; AAB02909.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601528; -.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PROPEP        ?    102       POTENTIAL.
FT   CHAIN       103    419       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      275    365       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      275    298       1.
FT   REPEAT      299    322       2.
FT   REPEAT      323    346       3.
FT   REPEAT      347    365       4 (PARTIAL).
FT   CARBOHYD    175    175       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    205    205       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    240    240       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   419 AA;  46883 MW;  9E598719DB3E014F CRC64;

  Query Match             100.0%;  Score 2336;  DB 1;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.1e-173;
  Matches  419;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
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Db          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLR 300

Qy        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        301 PASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCAC 360

Qy        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 ECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419


RESULT 2
VEGC_MOUSE
ID   VEGC_MOUSE     STANDARD;      PRT;   415 AA.
AC   P97953;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   2[illegible]-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (FLT4 LIGAND)
DE   (FLT4-L).
GN   VEGFC.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97164697; PubMed=9012504;
RA   Kukk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA   Joukov V., Alitalo K.;
RT   "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT   suggests a role in lymphatic vascular development.";
RL   Development 122:3829-3837(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97388482; PubMed=9247316;
RA   Fitz L.J., Morris J.C., Towler P., Long A., Burgess P., Greco R.,
RA   Wang J., Gassaway R., Nickbarg E., Kovacic S., Ciarletta A.,
RA   Giannotti J., Finnerty H., Zollner R., Beier D.R., Leak L.V.,
RA   Turner K.J., Wood C.R.;
RT   "Characterization of murine Flt4 ligand/VEGF-C.";
RL   Oncogene 15:613-618(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER, DISULFIDE LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC   --------------------------------------------------------------------------
DR   EMBL; U73620; AAC52984.1; -.
DR   EMBL; U58112; AAB46707.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:109124; Vegfc.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL        1      ?       POTENTIAL.
FT   PROPEP        ?     98       POTENTIAL.
FT   CHAIN        99    415       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN      271    361       4 X 24 AA TANDEM REPEATS.
FT   REPEAT      271    294       1.
FT   REPEAT      295    318       2.
FT   REPEAT      319    342       3.
FT   REPEAT      343    361       4 (PARTIAL).
FT   CARBOHYD    171    171       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    201    201       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    236    236       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   415 AA;  46471 MW;  D9D3DD3CECC659D6 CRC64;

  Query Match             87.7%;  Score 2048;  DB 1;  Length 415;
  Best Local Similarity   85.4%;  Pred. No. 2.1e-151;
  Matches  358;  Conservative   28;  Mismatches   29;  Indels    4;  Gaps    1;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||  | |:|||||:|||:| |||||   |||||||   |:||||| ||   |:  ||||||
Db          1 MHLLCFLSLACSLLAAALIPSPREAPATVAAFESGLGFSEAEPDGGEVKAFEGKDLEEQL 60

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||||||||:||||:||||||||||||||       |    ||:||  :::||||||||||||
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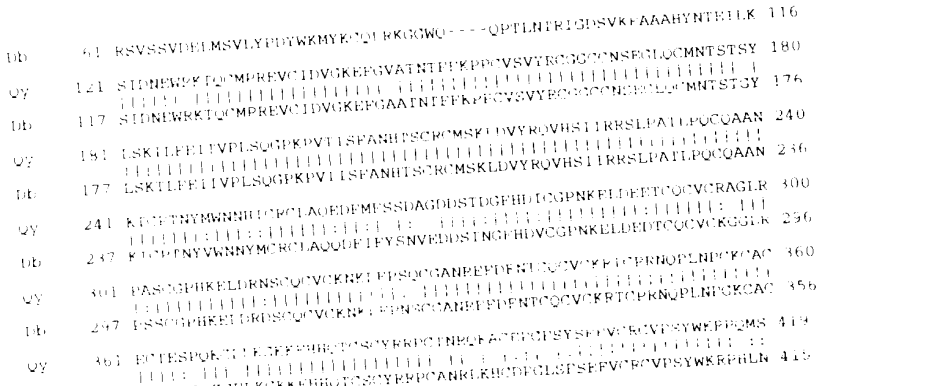

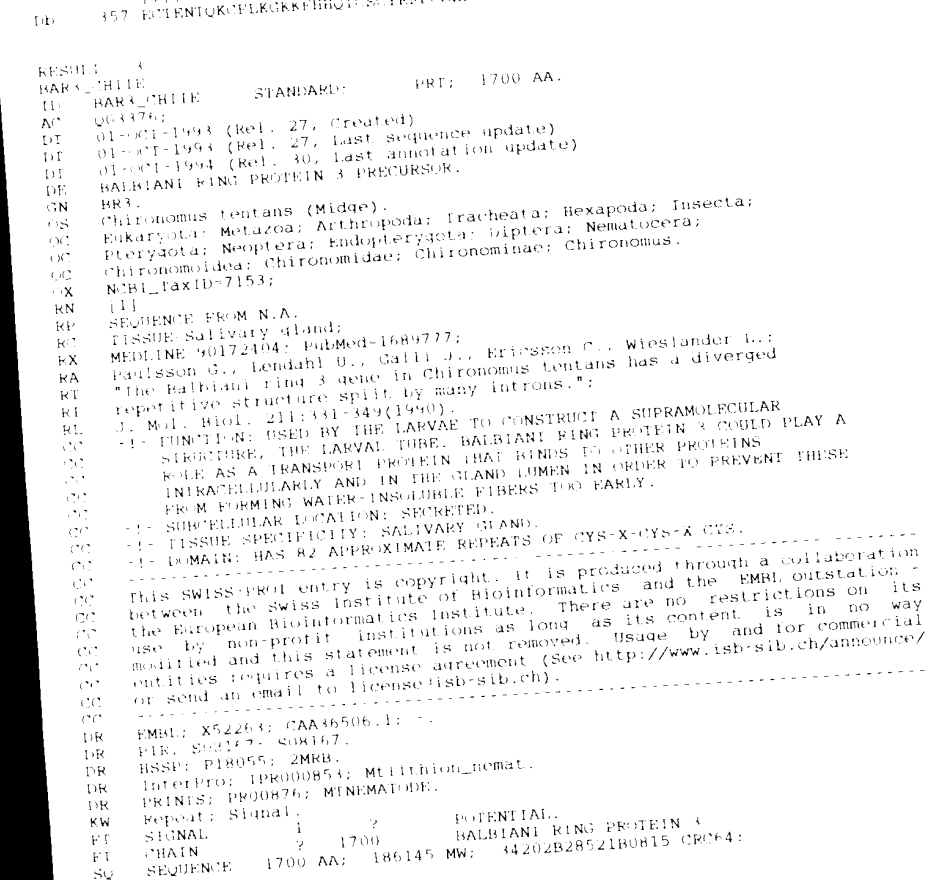

RESULT 3
BAR3_CHITE STANDARD; PRT; 1700 AA.
ID BAR3_CHITE
AC Q63376;
DT 01-OCT-1993 (Rel. 27, Created)
DT 01-OCT-1993 (Rel. 27, Last sequence update)
DT 01-OCT-1994 (Rel. 30, Last annotation update)
DE BALBIANI RING PROTEIN 3 PRECURSOR.
GN BR3.
OS Chironomus tentans (Midge).
OC Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC Pterygota; Neoptera; Endopterygota; Diptera; Nematocera;
OC Chironomoidea; Chironomidae; Chironominae; Chironomus.
OX NCBI_TaxID=7153;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE Salivary gland;
RX MEDLINE 90172404; PubMed-1689777;
RA Paulsson G., Lendahl U., Galli J., Eriesson C., Wieslander L.;
RT "The Balbiani ring 3 gene in Chironomus tentans has a diverged
RT repetitive structure split by many introns.";
RL J. Mol. Biol. 211:331-349(1990).
CC -!- FUNCTION: USED BY THE LARVAE TO CONSTRUCT A SUPRAMOLECULAR
CC STRUCTURE, THE LARVAL TUBE. BALBIANI RING PROTEIN 3 COULD PLAY A
CC ROLE AS A TRANSPORT PROTEIN THAT BINDS TO OTHER PROTEINS
CC INTRACELLULARLY AND IN THE GLAND LUMEN IN ORDER TO PREVENT THESE
CC FROM FORMING WATER-INSOLUBLE FIBERS TOO EARLY.
CC -!- SUBCELLULAR LOCATION: SECRETED.
CC -!- TISSUE SPECIFICITY: SALIVARY GLAND.
CC -!- DOMAIN: HAS 82 APPROXIMATE REPEATS OF CYS-X-CYS-X CYS.
CC ---
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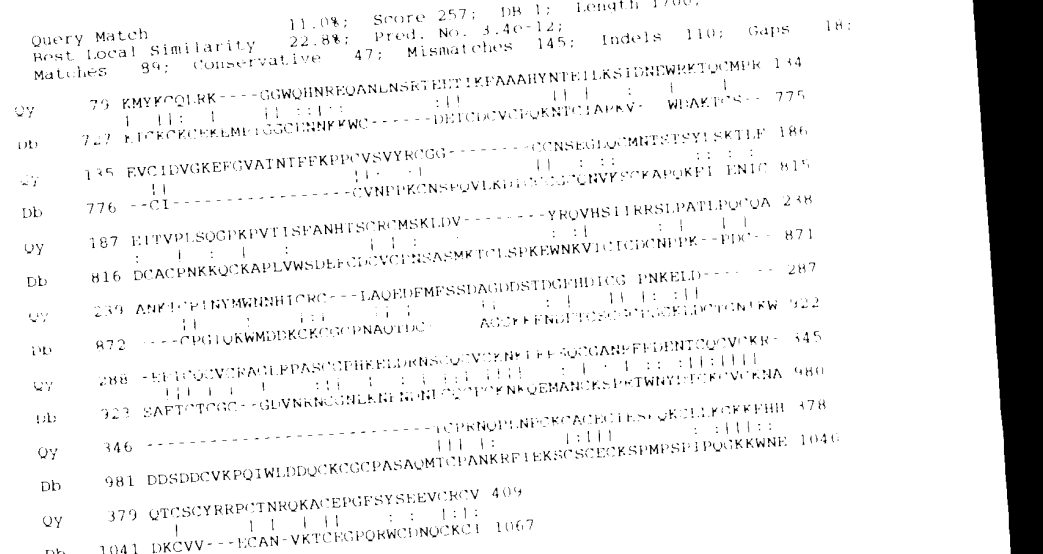
CC ---
DR EMBL; X52263; CAA36506.1; -.
DR PIR; S02167; S02167.
DR HSSP; P18056; 2MRB.
DR InterPro; IPR000853; Mullerian_nemat.
DR PRINTS; PR00876; MINEMATODE.
KW Repeat; Signal.
FT SIGNAL 1 2 POTENTIAL.
FT CHAIN 2 1700 BALBIANI RING PROTEIN 3
SQ SEQUENCE 1700 AA; 186145 MW; 3420ZB2852LB0815 CRC64;

Query Match 11.0%; Score 257; DB 1; Length 1700;
Best Local Similarity 22.8%; Pred. No. 3.4e-12;
Matches 89; Conservative 47; Mismatches 145; Indels 110; Gaps 18;



RESULT 4
VEGF_HUMAN STANDARD; PRT; 215 AA.
ID VEGF_HUMAN
AC P15692;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE PERMEABILITY FACTOR) (VPF).
GN VEGF OR VEGFA.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE 90069608; PubMed-2479986;
RA Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT "Vascular endothelial growth factor is a secreted angiogenic
RT mitogen.";
RL Science 246:1306-1309(1989).
RN [2]
RP SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RX MEDLINE-90069609; PubMed-2479987;
RA Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J.,
RA Connolly D.T.;
RT "Vascular permeability factor, an endothelial cell mitogen related to
RT PDGF.";
RL Science 246:1309-1312(1989).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE 91268072; PubMed-1711045;
RA Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D.,
RA Fiddes J.C., Abraham J.A.;
RT "The human gene for vascular endothelial growth factor. Multiple
RT protein forms are encoded through alternative exon splicing.";
RL J. Biol. Chem. 266:11947-11954(1991).
RN [4]
RP SEQUENCE FROM N.A.
RX MEDLINE-92231879; PubMed-1567395;

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RA   Weindel K., Marme D., Weich H.A.;
RT   "AIDS associated Kaposi's sarcoma cells in culture express vascular
RT   endothelial growth factor.";
RL   Biochem. Biophys. Res. Commun. 183:1167-1174(1992).
RN   [5]
RP   PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.
RX   MEDLINE 90062112; PubMed 2584205;
RA   Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,
RA   Siegel N., Haymore B.L., Leimgruber R., Feder J.;
RT   "Human vascular permeability factor. Isolation from U937 cells.";
RL   J. Biol. Chem. 264:20017-20024(1989).
RN   [6]
RP   SEQUENCE OF 27-41.
RX   MEDLINE 93145946; PubMed 7678805;
RA   Fiebich B.L., Jaeger R., Schoellmann C., Weindel K., Wilting J.,
RA   Kochs G., Marme D., Hug H., Weich H.A.;
RT   "Synthesis and assembly of functionally active human vascular
RT   endothelial growth factor homodimers in insect cells.";
RL   Eur. J. Biochem. 211:19-26(1993).
RN   [7]
RP   X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
RX   MEDLINE 97352774; PubMed 9207067;
RA   Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
RA   de Vos A.M.;
RT   "Vascular endothelial growth factor: crystal structure and functional
RT   mapping of the kinase domain receptor binding site.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
RN   [8]
RP   X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
RX   MEDLINE 98035455; PubMed 9351807;
RA   Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
RT   "The crystal structure of vascular endothelial growth factor (VEGF)
RT   refined to 1.93 A resolution: multiple copy flexibility and receptor
RT   binding.";
RL   Structure 5:1325-1338(1997).
RN   [9]
RP   X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 39-134.
RX   MEDLINE 99119204; PubMed 9922142;
RA   Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,
RA   Fairbrother W.J., Keenan C.J., Meng G., de Vos A.M.;
RT   "Crystal structure of the complex between VEGF and a receptor blocking
RT   peptide.";
RL   Biochemistry 37:17765-17772(1998).
RN   [10]
RP   STRUCTURE BY NMR OF 34-135.
RX   MEDLINE 97477915; PubMed 9336848;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "1H, 13C, and 15N backbone assignment and secondary structure of the
RT   receptor binding domain of vascular endothelial growth factor.";
RL   Protein Sci. 6:2250-2260(1997).
RN   [11]
RP   STRUCTURE BY NMR OF 137-215.
RX   MEDLINE 98208440; PubMed 9634701;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "Solution structure of the heparin binding domain of vascular
RT   endothelial growth factor.";
RL   Structure 6:637-648(1998).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: FOUR FORMS OF VEGF ARE PRODUCED BY
CC       ALTERNATIVE SPLICING OF THE SAME GENE (VEGF 121, VEGF 165,
CC       VEGF 189 AND VEGF 215).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC
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CC   --------------------------------------------------------------------------
DR   EMBL; M32977; AAA35789.1; -.
DR   EMBL; M27281; AAA36807.1; -.
DR   EMBL; M63978; AAA36804.1; -.
DR   EMBL; M63971; AAA36804.1; JOINED.
DR   EMBL; M63972; AAA36804.1; JOINED.
DR   EMBL; M63973; AAA36804.1; JOINED.
DR   EMBL; M63974; AAA36804.1; JOINED.
DR   EMBL; M63975; AAA36804.1; JOINED.
DR   EMBL; M63976; AAA36804.1; JOINED.
DR   EMBL; M63977; AAA36804.1; JOINED.
DR   EMBL; X62568; CAA44447.1; -.
DR   PIR; A34492; A34492.
DR   PIR; A40079; A40079.
DR   PIR; A40080; A40080.
DR   PIR; A40454; A40454.
DR   PIR; B40454; B40454.
DR   PIR; C40454; C40454.
DR   PIR; JQ1463; JQ1463.
DR   PIR; JQ1464; JQ1464.
DR   PIR; S17348; S17348.
DR   PDB; 1VGH; 08-APR-98.
DR   PDB; 2VGH; 08-APR-98.
DR   PDB; 1VPF; 08-APR-98.
DR   PDB; 2VPF; 29-JUL-98.
DR   PDB; 1VPP; 23-FEB-99.
DR   MIM; 192240; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal;
KW   3D-structure.
FT   SIGNAL        1     26
FT   CHAIN        27    215       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     52     94
FT   DISULFID     83    128
FT   DISULFID     87    130
FT   DISULFID     77     77       INTERCHAIN.
FT   DISULFID     86     86       INTERCHAIN.
FT   CARBOHYD    101    101       N-LINKED (GLCNAC. . .).
FT   VARSPLIC    141    141       K -> N (IN ISOFORM VEGF 121 AND ISOFORM
FT                                VEGF 165).
FT   VARSPLIC    142    165       MISSING (IN ISOFORM VEGF 165).
FT   VARSPLIC    142    209       MISSING (IN ISOFORM VEGF-121).
SQ   SEQUENCE   215 AA;  25173 MW;  7B9759AD5871FF33 CRC64;

  Query Match             9.7%;  Score 226;  DB 1;  Length 215;
  Best Local Similarity   23.5%;  Pred. No. 1e-10;
  Matches   66;  Conservative   31;  Mismatches   92;  Indels   92;  Gaps    8;

Qy         69 [illegible] 128
              |:  |:   |            :|   |:                   | :||                    : ::
Db         14 LLLYLHHAKWSQAAPMAEGGGQNHH            EVVKFM                DVYQR 49

Qy        129 [illegible] 188
              : | | |   :|: :|:            ||| ||  : |||||| |||:|: |   |  : :   :  |
Db         50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy        189 [illegible] 248
                    ||         :||    |    |  |    |  |   ||      :|
Db        [illegible] 145

Qy        249 WNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHK 308
                                                  |   |       :     :       ::      |    |||
```

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                                  -GKGKGQKRKRKKSRYKSWSVP--CGPCS 171
Db      146 ------------------------------
Qy      304 E------LDRNSCQCVCKNKLFPSQCGANR-EFDENTCQC 341
                 |    :|:| |||     |:| | : | :| ||:|
Db      172 ERRKHLFVQDPQTCKCSCKNT--DSRCKARQLELNERTCRC 210


RESULT     5
VEGF_PIG
ID   VEGF_PIG        STANDARD;          PRT;   190 AA.
AC   P49151;
DT   01-FEB-1996 (Rel. 33, Created)
DT   01-FEB-1996 (Rel. 33, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID=9823;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=95143284; PubMed=7841203;
RA   Sharma H.S., Tang Z.H., Gho B.C.H., Verdouw P.D.;
RT   "Nucleotide sequence and expression of the porcine vascular
RT   endothelial growth factor.";
RL   Biochim. Biophys. Acta 1260:235-238(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY (BY SIMILARITY).
CC   -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; X81380; CAA57143.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   190 AA;  22368 MW;  04D40B8D7913047F CRC64;

  Query Match              9.4%;  Score 218.5;  DB 1;  Length 190;
  Best Local Similarity   23.3%;  Pred. No. 3.4e-10;
  Matches   62;  Conservative   25;  Mismatches   72;  Indels  107;  Gaps    8;

Qy       85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
                                                  : :::: | | |   :|: :|:
Db       18 LHHAKWSQAAPMAEGDQKPHEVVKFM------------DVYQRSYCRPIETLVDIFQEY 64
              |    |      |  :  :   | :||

Qy      145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL-----SQGPKPV 199
                 ||| ||  : |||||| |||:|: |               | ||: :       ||
Db       65 FDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-------FNITMQIMRIKPHQGQHIG 117

Qy      200 TISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQ 259
              :||  |   | |  | |   ||
Db      118 EMSFLQHNKCECRPKKDRARQ--------------------------------------- 138

Qy      260 EDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCKAGLRPASCGPHKEL---DRNSCQ 316
                              : |||   |                          | |    |  :|:
Db      139 -----------------ENPCGPCSE-------------------------RRKHLFVQDPQTCK 161

Qy      317 CVCKNKLFPSQCGANR-EFDENTCQC 341
             | |||     |:| | : | :| ||:|
Db      162 CSCKNT--DSRCKARQLELNERTCRC 185


RESULT     6
VEGF_MOUSE
ID   VEGF_MOUSE      STANDARD;          PRT;   214 AA.
AC   Q00731;
DT   01-APR-1993 (Rel. 25, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92274860; PubMed=1592003;
RA   Breier G., Albrecht U., Sterrer S., Risau W.;
RT   "Expression of vascular endothelial growth factor during embryonic
RT   angiogenesis and endothelial cell differentiation.";
RL   Development 114:521-532(1992).
RN   [2]
RP   SEQUENCE FROM N.A. (VEGF-1).
RX   MEDLINE=92355593; PubMed=1644816;
RA   Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT   "Vascular endothelial growth factor. Regulation by cell
RT   differentiation and activated second messenger pathways.";
RL   J. Biol. Chem. 267:16317-16322(1992).
RN   [3]
RP   SEQUENCE OF 1-3 FROM N.A.
RX   MEDLINE=96216498; PubMed=8632007;
RA   Shima D.T., Kuroki M., Deutsch U., Ng Y., Adamis A.P., D'Amore P.A.;
RT   "The mouse gene for vascular endothelial growth factor. Genomic
RT   structure, definition of the transcriptional unit, and
RT   characterization of transcriptional and post-transcriptional
RT   regulatory sequences.";
RL   J. Biol. Chem. 271:3877-3883(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: VEGF-1 AND VEGF-2 ARE SECRETED WHILE
CC       VEGF-3 REMAINS CELL-SURFACE ASSOCIATED UNLESS RELEASED BY
CC       HEPARIN.
CC   -!- ALTERNATIVE PRODUCTS: THREE FORMS (VEGF-1, VEGF-2 AND VEGF-3) ARE
CC       PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME GENE. THE
CC       LONGEST FORM (VEGF-3, SHOWN HERE) CONTAINS A BASIC INSERT LINKED
CC       TO CELL-ASSOCIATION/HEPARIN-BINDING.
CC   -!- TISSUE SPECIFICITY: IN DEVELOPING EMBRYOS, EXPRESSED MAINLY IN
CC       THE CHOROID PLEXUS, PARAVENTRICULAR NEUROEPITHELIUM, PLACENTA AND
CC       KIDNEY GLOMERULI. ALSO FOUND IN BRONCHIAL EPITHELIUM, ADRENAL
CC       GLAND AND IN SEMINIFEROUS TUBULES OF TESTIS. HIGH EXPRESSION OF
CC       VEGF CONTINUES IN KIDNEY GLOMERULI AND CHOROID PLEXUS IN ADULTS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; S37052; AAB22252.1; -.
DR   EMBL; S38083; AAB22253.1; -.
DR   EMBL; S38100; AAB22254.1; -.
DR   EMBL; M95200; AAA40547.1; -.
DR   EMBL; U41383; -; NOT ANNOTATED CDS.
DR   PIR; A43351; A43351.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:103178; Vegf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .) (PROBABLE).
FT   VARSPLIC    140    140       K -> N (IN ISOFORM VEGF 1).
FT   VARSPLIC    141    164       MISSING (IN ISOFORM VEGF 1).
FT   VARSPLIC    141    208       MISSING (IN ISOFORM VEGF 2).
FT   CONFLICT    117    118       GE -> ER (IN REF. 2).
SQ   SEQUENCE   214 AA;  25283 MW;  B5540B51E4BB6E17 CRC64;

  Query Match             8.9%;  Score 207.5;  DB 1;  Length 214;
  Best Local Similarity   22.7%;  Pred. No. 2.7e-09;
  Matches   59;  Conservative   32;  Mismatches   98;  Indels   71;  Gaps    7;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
              |       |                  :: | |||                 : :::: | | |   :|: :|:
Db         18 LHHAKWSQAAPTTEGEQKSHEVIKFM----------DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTIS 202
                    ||| || : || |||| | |:|: || | ::  :  |     || |     :|
Db         65 PDEIEYIFKPSCVPLMRCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG----EMS 120

Qy        203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
              |  |: | |  | | | :       :|         :|  :        |: |  |  :
Db        121 ELQHSRCECRPKKDRTKPEKKSVRGK------GKGQKRKRKKSRFKSWSVHCEPCSERRKH 175

Qy        263 MFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNK 322
              :|  |                                               :|:| |||
Db        176 LFVQDP----------------------------------------------QTCKCSCKNT 191

Qy        323 LFPSQCGANREFDENTCQC 341
                 |:| | : | :| ||:|
Db        192 --DSRCKARQLELNERTCRC 209


RESULT 7
VEGF_RAT
ID   VEGF_RAT       STANDARD;      PRT;   190 AA.
AC   P16612;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   30-MAY-2000 (Rel. 39, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-190.
RX   MEDLINE=90207249; PubMed=2320579;
RA   Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA   Palisi T.M., Hope D.A., Thomas K.A.;
RT   "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
RT   that is homologous to platelet-derived growth factor.";
RL   Proc. Natl. Acad. Sci. U.S.A. 87:2628-2632(1990).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN THE PITUITARY, IN BRAIN, IN
CC       PARTICULARLY IN SUPRAOPTIC AND PARAVENTRICULAR NUCLEI AND THE
CC       CHOROID PLEXUS. ALSO FOUND ABUNDANTLY IN THE CORPUS LUTEUM OF
CC       THE OVARY AND IN KIDNEY GLOMERULI.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; M32167; AAA41211.1; -.
DR   PIR; A35987; A35987.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .).
SQ   SEQUENCE   190 AA;  22396 MW;  5893740104411F377 CRC64;

  Query Match             8.8%;  Score 206.5;  DB 1;  Length 190;
  Best Local Similarity   24.5%;  Pred. No. 2.9e-09;
  Matches   62;  Conservative   31;  Mismatches   71;  Indels   89;  Gaps   10;

Qy         92 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 151
              |: : :        ||    |    ||    |::| :|   :::: | | |   :|: :|:
Db         19 HHAKWSQAAPTTEGEQK---AH--EVVKFMD-VYQRSYCRPIETLVDIFQEYPDEIEYI 71

Qy        152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTISFANHTSC 209
              ||| || : || |||| | |:|: || | ::  :  |     || |     :||  |: |
Db         72 FKPSCVPLMRCAGCCNDEALECVPTSESNVTMQIMRIKPHQSQHIG----EMSFLQHSRC 127

Qy        210 RCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAG 269
               | | |                                      :| |      ||   |  :   :|  |
Db        128 ECRPKKD-----------------RTKP----ENHCEPCSERRKHLFVQDP 157

Qy        270 DDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCG 329
                                                          :|:| |||   |:|
Db        158 ------------------------------------------QTCKCSCKNT-DSRCK 172
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Qy        330 ANR-EFDENICQC 341
              : : | :| ||:|
Db        175 ARQLELNERTCRC 185


RESULT    8
VEGF_BOVIN
ID   VEGF_BOVIN     STANDARD;      PRT;   190 AA.
AC   P15691;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
RX   MEDLINE=90069608; PubMed=2479986;
RA   Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT   "Vascular endothelial growth factor is a secreted angiogenic
RT   mitogen.";
RL   Science 246:1306-1309(1989).
RN   [2]
RP   SEQUENCE OF 27-190 FROM N.A.
RX   MEDLINE=90121225; PubMed=2610687;
RA   Tischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
RA   Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
RT   "Vascular endothelial growth factor: a new member of the platelet-
RT   derived growth factor gene family.";
RL   Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
RN   [3]
RP   SEQUENCE OF 27-41.
RX   MEDLINE=89296596; PubMed=2735925;
RA   Ferrara N., Henzel W.J.;
RT   "Pituitary follicular cells secrete a novel heparin-binding growth
RT   factor specific for vascular endothelial cells.";
RL   Biochem. Biophys. Res. Commun. 161:851-858(1989).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   --------------------------------------------------------------------------
DR   EMBL; M32976; AAA30502.1; -.
DR   EMBL; M31836; AAA30804.1; -.
DR   EMBL; M33760; AAA30805.1; -.
DR   PIR; A33255; A33255.
DR   PIR; A33787; A33787.
DR   PIR; B40080; B40080.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF_1; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   CHAIN        27    190       BY SIMILARITY.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    100    100       MISSING (IN ISOFORM BETA).
FT   VARSPLIC    139    183       R -> K (IN ISOFORM BETA).
FT   VARSPLIC    184    184
SQ   SEQUENCE   190 AA;  22310 MW;  EDBF903E46E24789 CRC64;

  Query Match             8.8%;  Score 205.5;  DB 1;  Length 190;
  Best Local Similarity   22.8%;  Pred. No. 3.5e-09;
  Matches   60;  Conservative   25;  Mismatches   77;  Indels  101;  Gaps    8;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
Db         18 LHHAKWSQAAPMAEGGQKPHEVVKFM------------DVYQRSFCRPIETLVDIFQEY 64

Qy        145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNISTSYLSKTLFEITVPLSQ-GPKPVTIS 202
Db         65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG--EMS 120

Qy        203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
Db        121 FLQHNKCECRPKKDKARQ------------------------DRNSCQCVC 319

Qy        263 MFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKEL---RRKHLFVQDPQTCKCSC 164
Db        139 -----------ENPCGPCSE-----------------------

Qy        320 KNKLFPSQCGANR-EFDENICQC 341
              ||   |:| | : : :| ||:|
Db        165 KNT--DSRCKARQLELNERTCRC 185


RESULT    9
VEGF_CAVPO
ID   VEGF_CAVPO     STANDARD;      PRT;   164 AA.
AC   P26617;
DT   01-AUG-1992 (Rel. 23, Created)
DT   01-AUG-1992 (Rel. 23, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) (VASCULAR PERMEABILITY
DE   FACTOR) (VPF).
GN   VEGF.
OS   Cavia porcellus (Guinea pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX   NCBI_TaxID=10141;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Berse B.;
RL   Submitted (XXX-1992) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   modified and this statement is not removed.  Usage  by  and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
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CC
DR   EMBL; M84230; AAA37057.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF 1; 1.
DR   PROSITE; PS50278; PDGF 2; 1.
KW   Mitogen; Growth factor; Glycoprotein.
FT   DISULFID     25     67       BY SIMILARITY.
FT   DISULFID     56    101       BY SIMILARITY.
FT   DISULFID     60    103       BY SIMILARITY.
FT   DISULFID     50     50       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     59     59       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     74     74       N LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   164 AA;  19330 MW;  9EB86A81A9D5DCA4 CRC64;


  Query Match              8.5%;  Score 199.5;  DB 1;  Length 164;
  Best Local Similarity   22.5%;  Pred. No. 8.7e-09;
  Matches   56;  Conservative   28;  Mismatches   58;  Indels  107;  Gaps    8;

Qy      102 RTEEEIKEAAAHYNIEELKSIDNEWKKIQCMPREVCIDVGKEEGVAINIEEKEPCVSVYR 161
              :  | :||                :  ::::  |  |  |:  :|:  :|:          |||  ||  :  |
Db        9 EEEELVKEM               EVYKEQYCEPIEMLVEIFQEYPDEIEYIFKPSCVPLMR 55

Qy      162 CGGCCNSEGLQCMNISTSYLSKTLFEITVPL      SQGPKPVTISFANHTSCRCMSKLD 216
             ||||||  |  |:|:  |            |  ||:  :        ||      :||    |:  |  |    |  :
Db       56 CGGCCNDEGLECVPTE          ESNITMQIMRIKPHQGQHIGEMSFLQHNKCECRPKKD 108

Qy      217 VYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGF 276
               ||
Db      109 KARQ--------------------------------------------------------- 112

Qy      277 HDICGPNKELDEETCQCVCRAGLRPASCGPHKEL      DRNSCQCVCKNKLFPSQCGANR- 332
             :  |||    |                              |  |      |    :|:|  |:|      |:|  |  :
Db      113 ENPCGPCSE           -----RRKHLFVQDPQTCKCSCRNT--DSRCKARQL 150

Qy      333 EFDENTCQC 341
             |  :|  ||:|
Db      151 ELNERTCRC 159


RESULT 10
FP2_MYTGA
ID   FP2_MYTGA      STANDARD;      PRT;   473 AA.
AC   Q25464;
DT   30 MAY 2000 (Rel. 39, Created)
DT   30 MAY 2000 (Rel. 39, Last sequence update)
DT   20 AUG 2001 (Rel. 40, Last annotation update)
DE   ADHESIVE PLAQUE MATRIX PROTEIN 2 PRECURSOR (FOOT PROTEIN 2) (MGFP2)
DE   (MGFP-2).
GN   FP2.
OS   Mytilus galloprovincialis (Mediterranean mussel).
OC   Eukaryota; Metazoa; Mollusca; Bivalvia; Pteriomorphia; Mytiloida;
OC   Mytiloidea; Mytilidae; Mytilus.
OX   NCBI_TaxID=29158;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Foot;
RX   MEDLINE=95204464; PubMed=7896812;
RA   Inoue K., Takeuchi Y., Miki D., Odo S.;
RT   "Mussel adhesive plaque protein gene is a novel member of epidermal
RT   growth factor-like gene family.";
RL   J. Biol. Chem. 270:6698-6701(1995).
CC   -!- FUNCTION: PROVIDES ADHESIVENESS TO THE MUSSEL'S FOOT. MUSSELS
CC       PRODUCE ONE OF THE STRONGEST WATER INSOLUBLE GLUE. THE MUSSEL'S
CC       ADHESIVE IS A BUNDLE OF THREADS, CALLED A BYSSUS, FORMED BY A
CC       FIBROUS COLLAGENOUS CORE COATED WITH ADHESIVE PROTEINS.
CC   -!- SUBCELLULAR LOCATION: SECRETED.
CC   -!- TISSUE SPECIFICITY: PRODUCED BY THE BYSSAL GLAND.
CC   -!- DEVELOPMENTAL STAGE: EXPRESSION STARTS AT THE PEDIVELIGER, FOOT
CC       FORMATION, STAGE.
CC   -!- PTM: SOME TYROSINES ARE HYDROXYLATED (THUS PRODUCING DOPA = 3,4
CC       DIHYDROXYPHENYLALANINE).
CC   -!- SIMILARITY: CONTAINS 11 EGF-LIKE DOMAINS.
CC   --------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; D43794; BAA07852.1; -.
DR   InterPro; IPR000152; Asx_hydroxyl.
DR   InterPro; IPR000561; EGF-like.
DR   InterPro; IPR000742; EGF_2.
DR   InterPro; IPR001881; EGF_Ca.
DR   Pfam; PF00008; EGF; 11.
DR   SMART; SM00181; EGF; 10.
DR   PROSITE; PS00010; ASX_HYDROXYL; 2.
DR   PROSITE; PS00022; EGF_1; 11.
DR   PROSITE; PS01186; EGF_2; 10.
KW   Glycoprotein; EGF-like domain; Repeat; Signal; Hydroxylation.
FT   SIGNAL        1     17       POTENTIAL.
FT   CHAIN        18    473       ADHESIVE PLAQUE MATRIX PROTEIN 2.
FT   DOMAIN       45     81       EGF-LIKE 1.
FT   DOMAIN       82    117       EGF-LIKE 2.
FT   DOMAIN      118    154       EGF-LIKE 3.
FT   DOMAIN      155    191       EGF-LIKE 4.
FT   DOMAIN      192    228       EGF-LIKE 5.
FT   DOMAIN      229    265       EGF-LIKE 6.
FT   DOMAIN      266    301       EGF-LIKE 7.
FT   DOMAIN      302    340       EGF-LIKE 8.
FT   DOMAIN      342    378       EGF-LIKE 9.
FT   DOMAIN      383    420       EGF-LIKE 10.
FT   DOMAIN      425    461       EGF-LIKE 11.
FT   MOD_RES      23     23       DOPA.
FT   MOD_RES      31     31       DOPA.
FT   MOD_RES      36     36       DOPA.
FT   MOD_RES      43     43       DOPA.
FT   CARBOHYD     93     93       N LINKED (GLCNAC. . .) (POTENTIAL).
FT   DISULFID     49     60       BY SIMILARITY.
FT   DISULFID     54     69       BY SIMILARITY.
FT   DISULFID     71     80       BY SIMILARITY.
FT   DISULFID     86     97       BY SIMILARITY.
FT   DISULFID     91    106       BY SIMILARITY.
FT   DISULFID    108    117       BY SIMILARITY.
FT   DISULFID    122    133       BY SIMILARITY.
FT   DISULFID    127    143       BY SIMILARITY.
FT   DISULFID    145    154       BY SIMILARITY.
FT   DISULFID    159    170       BY SIMILARITY.
FT   DISULFID    164    180       BY SIMILARITY.
FT   DISULFID    182    191       BY SIMILARITY.
FT   DISULFID    196    207       BY SIMILARITY.
FT   DISULFID    201    217       BY SIMILARITY.
FT   DISULFID    219    228       BY SIMILARITY.
FT   DISULFID    233    244       BY SIMILARITY.
FT   DISULFID    238    254       BY SIMILARITY.
FT   DISULFID    256    265       BY SIMILARITY.
FT   DISULFID    270    281       BY SIMILARITY.
FT   DISULFID    275    290       BY SIMILARITY.
FT   DISULFID    292    301       BY SIMILARITY.
FT   DISULFID    306    317       BY SIMILARITY.
FT   DISULFID    311    328       BY SIMILARITY.
FT   DISULFID    330    339       BY SIMILARITY.
FT   DISULFID    346    357       BY SIMILARITY.
FT   DISULFID    351    366       BY SIMILARITY.
FT   DISULFID    368    377       BY SIMILARITY.
FT   DISULFID    387    399       BY SIMILARITY.
FT   DISULFID    393    408       BY SIMILARITY.
FT   DISULFID    410    419       BY SIMILARITY.
FT   DISULFID    429    440       BY SIMILARITY.
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FT   DISULFID    434    449       BY SIMILARITY.
FT   DISULFID    451    460       BY SIMILARITY.
SQ   SEQUENCE   473 AA;  51772 MW;  BA76BA8C3BA49A0F CRC64;

  Query Match             7.8%;  Score 182.5;  DB 1;  Length 473;
  Best Local Similarity   21.9%;  Pred. No. 5.3e-07;
  Matches  100;  Conservative   37;  Mismatches  127;  Indels  193;  Gaps   27;

Qy      81 YE[illegible]WQHNREQANLNS[illegible]EFAAAHYNIEILKSIDNEWRK[illegible]MPREV[illegible]DV 140
Db      67 YF[illegible]Y [illegible] [illegible]
Qy     141 [illegible]VAINTFFK[illegible]VYR[illegible]NS[illegible]MN[illegible]IIV[illegible]V 19[illegible]
Db     [illegible] 14[illegible]
Qy     20[illegible] IISFANH[illegible]VYRQVH[illegible]ATIP[illegible]AANKT[illegible]NYMWNNHI[illegible] 255
Db     147 ---GGY[illegible]----------EVH ------ ACKPNP[illegible]ENF[illegible]CR 191
Qy     256 [illegible]----AQEDFMF---SSDAGDDSTDGFHD---------------[illegible]DGPNKELDE 288
Db     182 [illegible]CKNG 241
Qy     289 E[illegible]----QCVCRAGLRPASC------GPHKELDR----N[illegible]VCKNKLFPSQ[illegible] 328
Db     242 [illegible] 301
Qy     [illegible] [illegible] 35[illegible]
Db     302 [illegible]CNYNG 361
Qy     35[illegible] -AC[illegible]---------------------FSP[illegible]KGKKF-------HHQTC 381
Db     362 KIY[illegible] 421
Qy     382 SCYR-----RPCINRQKACEPGFSYSEEVCRCVPSY 412
Db     422 KSYKKNP[illegible]---VCKCARGY 455


RESULT 11
VEGF_CHICK
ID   VEGF_CHICK     STANDARD;      PRT;   216 AA.
AC   P52582; Q91420;
DT   01-OCT-1996 (Rel. 34, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Gallus gallus (Chicken), and
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031, 93934.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES Chicken; TISSUE Heart;
RA   Takahashi T.;
RL   Submitted ([illegible]) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   SPECIES C.c.japonica; TISSUE Embryo;
RX   MEDLINE 96005007; PubMed 7556923;
RA   Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;
RT   "Overexpression of vascular endothelial growth factor in the avian
RT   embryo induces hypervascularization and increased vascular
RT   permeability without alterations of embryonic pattern formation.";
RL   Dev. Biol. 171:399-414(1995).
RN   [3]
RP   SEQUENCE OF 60-187 FROM N.A.
RC   SPECIES C.c.japonica;
RX   MEDLINE 95301109; PubMed 7781909;
RA   Flamme I., Breier G., Risau W.;
RT   "Vascular endothelial growth factor (VEGF) and VEGF receptor 2
RT   (flk-1) are expressed during vasculogenesis and vascular
RT   differentiation in the quail embryo.";
RL   Dev. Biol. 169:699-712(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER, DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: THREE ISOFORMS (VEGF-190, VEGF-146 AND VEGF
CC       166) ARE PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME
CC       GENE. THE LONGER FORM CONTAINS A BASIC INSERT WHICH ACTS AS A CELL
CC       RETENTION SIGNAL.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY AND EQUALLY EXPRESSED IN HEART AND
CC       LIVER. IN KIDNEY, [illegible], BRAIN AND YOLK SAC, VEGF-166 FORM IS
CC       5- TO 10- TIMES MORE ABUNDANT THAN THE VEGF-190 FORM.
CC   -!- DEVELOPMENTAL STAGE: THE VEGF-166 FORM IS EXPRESSED EARLY AT DAY 1
CC       AND IS UPGRADED DURING GASTRULATION. EXPRESSION OF THE VEGF-190
CC       FORM IS DETECTABLE ONLY FROM DAY 2.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; AB011078; BAA24925.1; -.
DR   EMBL; S79680; AAB35371.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    216       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     83    128       BY SIMILARITY.
FT   DISULFID     87    130       BY SIMILARITY.
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     86     86       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    101    101       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   VARSPLIC    142    142       K -> N (IN ISOFORM VEGF-166).
FT   VARSPLIC    143    166       MISSING (IN ISOFORM VEGF-166).
FT   VARSPLIC    166    166       F -> L (IN ISOFORM VEGF-146).
FT   VARSPLIC    167    216       MISSING (IN ISOFORM VEGF-146).
SQ   SEQUENCE   216 AA;  25203 MW;  82E669C2F6FC6DA7 CRC64;

  Query Match             7.6%;  Score 178.5;  DB 1;  Length 216;
  Best Local Similarity   20.9%;  Pred. No. 4.8e-07;
  Matches   55;  Conservative   41;  Mismatches   98;  Indels   69;  Gaps    8;

Qy      9[illegible] WQHNREQANLNS[illegible]AAA-----HYNI[illegible]NEWRK[illegible]MP[illegible]EV[illegible]KEF 144
Db       7 W[illegible]AAF[illegible]AAF[illegible]FNEVIEFLD VYERSFCRTIETLVD[illegible]FQEY 65
Qy     145 GVATNTFFKP[illegible]VSVYR[illegible]MNT[illegible]SYI[illegible]VP[illegible]KPV 199
Db      66 PDEVEYIFRPSCVPLMRCAGCCGDEGLECVPVD         VYNVTMEIARIKPHQSQHIA 118
Qy     200 TI[illegible]TANHTS[illegible]KLEVYRQVH[illegible]LPATLPQ[illegible]AANKT[illegible]PTNYMWNNHI[illegible]LAQ 259
Db     119 HMSFLQHS[illegible]KPKKDVKNK[illegible]GRYKPPSF     [illegible]EPCSER 174
Qy     260 [illegible]V[illegible] 319
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Db    175 RKHLEVQ                         DPQTCKCSC                      190

Qy    329 KNKLFPSQCGANREFDENTCQC 341

Db    191     KEIDSRCKSRQLELNERTCRC 211


RESULT 12
VEGB_HUMAN
ID   VEGB_HUMAN      STANDARD;      PRT;   188 AA.
AC   P49765;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VEGF RELATED
DE   FACTOR).
GN   VEGFB OR VRF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96197355; PubMed=8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=97027124; PubMed=8919691;
RA   Grimmond S., Lagercrantz J., Drinkwater C., Silins G., Townson S.,
RA   Pollock P., Gotley D., Carson E., Rakar S., Nordenskjoeld M., Ward L.,
RA   Hayward N., Weber G.;
RT   "Cloning and characterization of a novel human gene related to
RT   vascular endothelial growth factor.";
RL   Genome Res. 6:124-131(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN ALL TISSUES EXCEPT LIVER.
CC       HIGHEST LEVELS FOUND IN HEART, SKELETAL MUSCLE AND PANCREAS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; U48801; AAB06274.1; -.
DR   EMBL; U43368; AAA91463.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601398; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin binding.
FT   SIGNAL        1     21       POTENTIAL.
FT   CHAIN        22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21261 MW;  D94654D5A3727194 CRC64;


  Query Match              7.5%;  Score 175.5;  DB 1;  Length 188;
  Best Local Similarity   22.5%;  Pred. No. 7.2e-07;
  Matches   52;  Conservative   26;  Mismatches   78;  Indels   75;  Gaps    6;

Qy    111 AAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEG 170

Db     28 APGHQRKVVSWIDVYTRAT-CQPREVVVPLTVELMGTVAKQLVPSCVTVQRCGGCCPDDG 86

Qy    171 LQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLP 230

Db     87 LECVPTGQHQVRMQILMIRYPSSQLGE----MSLEEHSQCECRPK---KKDSAVKPDSP 138

Qy    231 ATLPQCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEET 290

Db    139 RPL---------CP---------RCTQH--------------------------------- 148

Qy    291 CQCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQC 341

Db    149 -----------------HQRPDPRTCRCRCRRRSFLRCQGRGLELNPDTCRC 183


RESULT 13
VEGB_MOUSE
ID   VEGB_MOUSE      STANDARD;      PRT;   188 AA.
AC   P49766;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VASCULAR
DE   ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRF).
GN   VEGFB OR VRF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=96197355; PubMed=8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Brain;
RX   MEDLINE=96183052; PubMed=8607868;
RA   Townson S., Lagercrantz J., Grimmond S., Silins G.,
RA   Nordenskjoeld M., Weber G., Hayward N.K.;
RT   "Characterization of the murine VEGF-related factor gene.";
RL   Biochem. Biophys. Res. Commun. 220:922-928(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN HEART, BRAIN, KIDNEY
CC       AND SKELETAL MUSCLE.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; U48800; AAB06273.1; -.
DR   EMBL; U43837; AAC52553.1; -.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:106199; Vegfb.
DR   InterPro; IPR000072; PDGF.
```

```
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin-binding.
FT   SIGNAL        1     21       POTENTIAL.
FT   CHAIN        22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21442 MW;  D52A055FB995E9CA CRC64;

  Query Match              7.5%;  Score 175;  DB 1;  Length 188;
  Best Local Similarity   26.5%;  Pred. No. 7.8e-07;
  Matches   53;  Conservative   27;  Mismatches   80;  Indels   40;  Gaps    8;

Qy        101 SRIPFFI-KFAAAHYNIETLKSIDNEWRKTQCMPREVCIDVGKEFGVAINTFFKPPCVSV 159
              : |:  : :|       :  :::  ||    | | | |||| :  :  |           | ||:|
Db         17 ARIQAPVSQPDGPSHQKKVVPWIDVYARAT-CQPREVVVPLSMELMGNVVKQLVPSCVTV 75

Qy        160 YRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYR 219
                ||||| :||:|: |     :    :  |   | :|  :    :|    |: | |  |
Db         76 QRCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE    MSLEEHSQCECRPK --- 127

Qy        220 QVHSIIRRSLPATL-PQCQAAN    KTCPTNYMWNNHICRCLAQEDFMFSSDAGDDST 273
              : | ::   |  | | |              :||               |||  :
Db        128 KKESAVKPDSPRILCPPCTQRRQRPDPRTCR-------CRCRRR---- ------- 165

Qy        274 DGFHDICGPNKELDEETCQC 293
                 |    ||: :||:|
Db        166   FLHCQGRGLELNPDTCRC 183


RESULT 14
VEGF_SHEEP
ID   VEGF_SHEEP     STANDARD;      PRT;   146 AA.
AC   P50412;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Ovis aries (Sheep).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Caprinae; Ovis.
OX   NCBI_TaxID 9940;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE Kidney;
RX   MEDLINE 97117958; PubMed 8958842;
RA   Redmer D.A., Dai Y., Li J., Charnock-Jones D.S., Smith S.K.,
RA   Reynolds L.P., Moor R.M.;
RT   "Characterization and expression of vascular endothelial growth
RT   factor (VEGF) in the ovine corpus luteum.";
RL   J. Reprod. Fertil. 108:157-165(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH. INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   --------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   --------------------------------------------------------------------------
DR   EMBL; X89506; CAA61677.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    146       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   146 AA;  17247 MW;  4E792CB557F91760 CRC64;

  Query Match              7.4%;  Score 173.5;  DB 1;  Length 146;
  Best Local Similarity   29.0%;  Pred. No. 7.9e-07;
  Matches   40;  Conservative   18;  Mismatches   61;  Indels   19;  Gaps    3;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
              |    |       :    :  | :||                : :::: | | |  :|: :|:
Db         18 LHHAKWSQAAPMAEGGQKPHEVMKFM --------     DVYQRSFCRPIETLVDIFQEY 64

Qy        145 GVATNIFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTIS 202
                        ||| || : ||||||  | |:|: :       ::   :   |     ||  |      :|
Db         65 PDEIEFIFKPSCVPLMRCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG  - EMS 120

Qy        203 FANHTSCRCMSKLDVYRQ 220
                |  |  | |  | |  ||
Db        121 FLQHNKCECRPKKDKARQ 138


RESULT 15
VWF_PIG
ID   VWF_PIG        STANDARD;      PRT;  2482 AA.
AC   Q28833;
DT   20-AUG-2001 (Rel. 40, Created)
DT   20-AUG-2001 (Rel. 40, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VON WILLEBRAND FACTOR PRECURSOR (VWF) (FRAGMENT).
GN   F8VWF OR VWF.
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID 9823;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Seaman W.T., Read M.S., Bellinger D.A., Nichols T.C.;
RL   Submitted (MAR-1998) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE OF 397-553 FROM N.A.
RX   MEDLINE 93356762; PubMed 8352759;
RA   Lavergne J.M., Piao Y.C., Ferreira V., Kerbiriou-Nabias D.,
RA   Bahnak B.R., Meyer D.;
RT   "Primary structure of the factor VIII binding domain of human, porcine
RT   and rabbit von Willebrand factor.";
RL   Biochem. Biophys. Res. Commun. 194:1019-1024(1993).
CC   -!- FUNCTION: IMPORTANT IN THE MAINTENANCE OF HOMEOSTASIS. IT
CC       PARTICIPATES IN PLATELET-VESSEL WALL INTERACTIONS BY FORMING A
CC       NONCOVALENT COMPLEX WITH COAGULATION FACTOR VIII AT THE SITE OF
CC       VASCULAR INJURY (BY SIMILARITY).
CC   -!- SUBUNIT: MULTIMERIC (BY SIMILARITY).
CC   -!- PTM: ALL CYSTEINE RESIDUES ARE INVOLVED IN INTRACHAIN OR
CC       INTERCHAIN DISULFIDE BONDS (BY SIMILARITY).
CC   -!- SIMILARITY: CONTAINS 3 VWFC DOMAINS.
CC   -!- SIMILARITY: CONTAINS 1 CTCK (C-TERMINAL CYSTINE KNOT-LIKE) DOMAIN (...F).
CC   -!- SIMILARITY: SOME, TO SILKWORM HEMOCYTIN.
CC   --------------------------------------------------------------------------
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CC
DR   EMBL; AF052036; AAC06229.1; -.
DR   EMBL; S64541; AAB27829.2; -.
DR   HSSP; P04275; 1ATZ.
DR   InterPro; IPR000359; Cys knot.
DR   InterPro; IPR000561; EGF like.
DR   InterPro; IPR001928; Endothlin tox.
DR   InterPro; IPR000864; Potato inhibit.
DR   InterPro; IPR002919; TIL.
DR   InterPro; IPR001007; VWFC.
DR   InterPro; IPR001846; Vwd.
DR   InterPro; IPR002035; vWFA.
DR   Pfam; PF00007; Cys knot; 1.
DR   Pfam; PF01826; TIL; 3.
DR   Pfam; PF00092; vwa; 3.
DR   Pfam; PF00093; vwc; 3.
DR   Pfam; PF00094; vwd; 3.
DR   PRINTS; PR00365; ENDOTHELIN.
DR   PRINTS; PR00453; VWFADOMAIN.
DR   SMART; SM00041; CT; 1.
DR   SMART; SM00181; EGF; 1.
DR   SMART; SM00327; VWA; 3.
DR   SMART; SM00214; VWC; 5.
DR   SMART; SM00216; VWD; 3.
DR   PROSITE; PS50234; VWFA; 3.
DR   PROSITE; PS01208; VWFC; 3.
DR   PROSITE; PS01185; CTCK 1; 1.
DR   PROSITE; PS01225; CTCK 2; 1.
KW   Blood coagulation; Platelet; Glycoprotein; Extracellular matrix;
KW   Plasma; Endothelial cell; Repeat; Cell adhesion.
FT   NON TER       1      1
FT   PROPEP       <1    437       BY SIMILARITY.
FT   CHAIN       438   2482       VON WILLEBRAND FACTOR.
FT   DOMAIN       62    215       VWFD 2.
FT   DOMAIN      438    461       AMINO TERMINAL.
FT   DOMAIN      462    507       E1.
FT   DOMAIN      500    527       CX.
FT   DOMAIN      541    687       VWFD 3.
FT   DOMAIN      947   1127       VWFA 1.
FT   DOMAIN     1167   1334       VWFA 2.
FT   DOMAIN     1360   1540       VWFA 3.
FT   DOMAIN     1619   1771       VWFD 4.
FT   DOMAIN     1885   1930       E2.
FT   DOMAIN     1924   1997       VWFC 1.
FT   DOMAIN     2098   2164       VWFC 2.
FT   DOMAIN     2249   2319       VWFC 3.
FT   DOMAIN     2393   2481       CTCK.
FT   SITE       2176   2178       CELL ATTACHMENT SITE (POTENTIAL).
FT   DISULFID    441    482       BY SIMILARITY.
FT   DISULFID    450    478       BY SIMILARITY.
FT   DISULFID    484    495       BY SIMILARITY.
FT   DISULFID    541    670       BY SIMILARITY.
FT   DISULFID    563    705       BY SIMILARITY.
FT   DISULFID    572    667       BY SIMILARITY.
FT   DISULFID    588    595       BY SIMILARITY.
FT   DISULFID    734    758       BY SIMILARITY.
FT   DISULFID    745    785       BY SIMILARITY.
FT   DISULFID    763    765       BY SIMILARITY.
FT   DISULFID    827    839       BY SIMILARITY.
FT   DISULFID    823    843       BY SIMILARITY.
FT   DISULFID    860    864       BY SIMILARITY.
FT   DISULFID    870    873       BY SIMILARITY.
FT   DISULFID    908    911       BY SIMILARITY.
FT   DISULFID    942   1128       BY SIMILARITY.
FT   DISULFID   1338   1339       BY SIMILARITY.
FT   DISULFID   1355   1541       BY SIMILARITY.
FT   DISULFID   1548   1573       BY SIMILARITY.
FT   DISULFID   1568   1609       OR 1611 (BY SIMILARITY).
FT   DISULFID   1641   1792       BY SIMILARITY.
FT   DISULFID   1619   1754       BY SIMILARITY.
FT   DISULFID   1596   1757       BY SIMILARITY.
FT   DISULFID   1662   1673       BY SIMILARITY.
FT   DISULFID   2393   2443       BY SIMILARITY.
FT   DISULFID   2408   2457       BY SIMILARITY.
FT   DISULFID   2419   2473       BY SIMILARITY.
FT   DISULFID   2423   2475       BY SIMILARITY.
FT   DISULFID      ?   2480       BY SIMILARITY.
FT   CARBOHYD    340    340       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    905    905       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   1184   1184       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   1243   1243       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   1640   1640       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   1892   1892       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   1959   1959       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   2026   2026       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   2069   2069       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   2215   2215       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   2254   2254       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD   2459   2459       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   2482 AA;  272394 MW;  D499B7DDFBBCAEDD CRC64;

  Query Match             7.0%;  Score 163.5;  DB 1;  Length 2482;
  Best Local Similarity   24.2%;  Pred. No. 8.7e-05;
  Matches   79;  Conservative   25;  Mismatches  113;  Indels  109;  Gaps   20;

Qy        152 FKPP---------CVSVYRCGCCCNSECLQCMNTSISYLSKILFEIIVPLSQGPKPVIISF 203
              | ||           ||    |   |  : :|::                  |  ||   |    |   |
Db       1905 FCPPHQVMLGSSCVPEEACTQCVDDDGIR----------HQFLEIWVPDHQ----PCQI 1949

Qy        204 ANHTGCKCMSKLDVYKQVHSIIKKGLLATLLPQ-------------QAANKICPINYMWNNHIC 254
                  | :: |       |:|:   ::      |   |  |          |  |:: ||           : |
Db       1950 ------CICLSG---RRVNCTLQPCPIARAPACGLCEVARLRQEAHQCCP---------EYEC 1994

Qy        255 RC-LAQEDF--MFSSDAGDDSIDGFHDICGFNKELDEEICQC----VCRAGLRPASCGFHK 308
                | |    |     :        : |     |          | ||          || :       |     |    |  || || :
Db       1995 VCDLVSCDLPPVPHCEGGLQPILINPGECRPN--------FTCACKKEECPRGPLP-SCPPHK 2048

Qy        309 E---------LDRNSCQCVCKNKLIPSQCGANREFDENICQCVCKRIC-----------   347
                                |     |   |   |   |                    |              |   |   |         ||
Db       2049 TPALRKTQCCDEYECACNCVNITLSCPLCYLASTVINDCGCT-TTTCLPDKVCVHRGIVY 2107

Qy        348 PRNQPLNPGKCACECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSY----SEE 404
                |    |        |      |  ||:              |:                   :       |   : :||      :   :|  |||: |          |
Db       2108 PVGQFWEEGCDVCTCTD-----LEDAVMGLRVAQCAQKPC----EDSCRPGFIYVLHEGE 2158

Qy        405 VC-RCVP--------------SYWK 414
                | :|:|                         ||||
Db       2159 CCGKCLPSACKVVIGSFRGDSVSYWK 2184


Search completed: December 26, 2001, 11:44:01
Job time: 864 sec
```

GenCore version 4.5
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OM protein - protein search, using sw model

Run on: December 26, 2001, 11:28:12 ; Search time 130.34 Seconds
(without alignments)
610.804 Million cell updates/sec

Title: US-09-534-376A-8
Perfect score: 2336
Sequence: 1 MHLLGFFSVACSLLAAALLPGPEAP-AAAAAFESGLDLSDAEPDAGEATAYASKELPEL 59

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 473505 seqs, 146272329 residues

Total number of hits satisfying chosen parameters: 473505

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPIREMBL_17:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Prod. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	2092.5	89.6	420	6	Q9XS50	Q9xs50 bos taurus
2	1811.5	77.9	418	13	O57452	O57452 coturnix co
3	764.5	32.2	454	4	O43915	O43915 homo sapien
4	764.5	32.1	458	11	P97946	P97946 mus musculu
5	675.5	28.9	426	11	O35251	O35251 rattus norv
6	644	27.1	126	11	O35757	O35757 rattus norv
7	269.5	11.5	1734	5	Q94446	Q94446 chironomus
8	252	10.8	1698	5	Q94438	Q94438 chironomus
9	238.5	10.2	232	4	Q9H1W9	Q9h1w9 homo sapien
10	238.5	10.2	254	4	Q16889	Q16889 homo sapien
11	231	9.9	209	4	O60720	O60720 homo sapien
12	226.5	9.7	208	6	Q9XSF4	Q9xst4 canis lamil
13	226.5	9.7	214	6	Q9MYV3	Q9myv3 canis lamil
14	221.5	9.5	214	6	Q9XSF5	Q9xst5 canis lamil
15	220.5	9.4	190	6	Q9DKR0	Q9dkr0 equus cabal
16	217.5	9.3	190	6	Q9XSF3	Q9xst3 canis lamil
17	214.5	9.3	190	6	Q9QL52	Q9ql52 sus scrofa
18	212.5	9.1	190	11	Q9QX39	Q9qx39 spalax leuc
19	211	9.0	191	4	O75475	O75475 homo sapien
20	209	8.9	122	6	Q9GLX1	Q9glx1 bos taurus
21	206.5	8.8	214	11	Q9QX07	Q9qx07 rattus norv
22	202.5	8.7	190	6	Q77643	Q77643 ovis aries
23	202	8.6	194	13	O42572	O42572 xenopus lae
24	200.5	8.6	174	4	Q9UL23	Q9ul23 homo sapien
25	196.5	8.4	190	11	Q99PS1	Q99ps1 mesocricetu
26	195	8.3	171	4	Q9BIW8	Q9biw8 homo sapien
27	194	8.3	704	3	O74567	O74567 trichoderma
28	192	8.2	142	11	Q9ERL6	Q9erl6 mesocricetu
29	192	8.2	147	4	Q9UB58	Q9ub58 homo sapien
30	189.5	8.1	814	5	Q9BIX1	Q9bix1 drosophila
31	188.5	7.9	168	13	O73682	O73682 brachydanio
32	183	7.8	126	6	Q9BDP7	Q9bdp7 macaca mula
33	181	7.7	861	5	Q9VWP6	Q9vwp6 drosophila
34	179.5	7.7	148	13	O42571	O42571 xenopus lae
35	177	7.6	124	6	Q9GK00	Q9gk00 callithrix
36	174	7.4	999	4	Q9NQ36	Q9nq36 homo sapien
37	173.5	7.4	118	6	Q9MZB1	Q9mzb1 ovis aries
38	173.5	7.4	150	11	O54881	O54881 rattus norv
39	173.5	7.4	188	6	Q9XS48	Q9xs48 bos taurus
40	173	7.4	800	5	Q9VH78	Q9vh78 drosophila
41	172.5	7.4	170	11	Q9JKX7	Q9jkx7 rattus norv
42	172.5	7.4	1810	13	Q90824	Q90824 gallus gall
43	170.5	7.3	146	11	Q9QX06	Q9qx06 rattus norv
44	165	7.1	144	13	O73822	O73822 brachydanio
45	164.5	7.0	765	5	Q9NI50	Q9ni50 sarcophaga

ALIGNMENTS

RESULT 1
Q9XS50
ID Q9XS50 PRELIMINARY; PRT: 420 AA.
AC Q9XS50;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=HEART;
RA Liu X., Yonekura H., Yamamishi S., Yamamoto Y., Yamamoto H.;
RT "Structure and expression of bovine VEGF family.";
RL Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
DR EMBL; AB004275; BAA77687.1; -.
DR HSSP; P15692; 1VPF.
DR InterPro; IPR000072; PDGF.
DR Pfam; PF00341; PDGF; 1.
DR ProDom; PD001629; PDGF; 1.
DR SMART; SM00141; PDGF; 1.
DR PROSITE; PS00249; PDGF_1; 1.
DR PROSITE; PS50278; PDGF_2; 1.
KW Signal.
FT SIGNAL 1 20 POTENTIAL.
FT CHAIN 21 420 VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ SEQUENCE 420 AA; 46681 MW; 58BA84317A9C8E2D CRC64;

Query Match 89.6%; Score 2092.5; DB 6; Length 420;
Best Local Similarity 88.1%; Pred. No. 7.6e-190;
Matches 470; Conservative 19; Mismatches 40; Indels 1; Gaps 1;

Qy 1 MHLLGFFSVACSLLAAALLPGPEAP-AAAAAFESGLDLSDAEPDAGEATAYASKELPEL 59
Db 1 MHLLGFGSVACSLLAAALLPGPEAPAAAAAAFESGLGFSDTEPDAGENKAYAGKEMEEL 60

Qy 60 IRFVEEVTDFMRTVYQHNNESSLPSWNEFVERYGYVSEGLERMWIYRLKKRVREMEENLT 119

```
              |||||||||||||||||||||||||||||||||||: |||| | || ||:||||||||||||
Db         61 LESVSSVDELMIVLYPEYWEMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEIL 120

Qy        120 KSIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTS 179
              :||||||||||||||||||||||||| ||||||||||||||||||||||||| |||||||
Db        121 KSIDNEWRKTQCMPREVCIDVGKEFGAATNTFFKPPCVSVYRCGGCCNSEGQQCMNISTS 180

Qy        180 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAA 239
              |||||||||||||||||||||||||||||||||||||||||||||||||||| ||||||
Db        181 YLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPAALPQCQAA 240

Qy        240 NKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGL 299
              ||||| :|:|||||:|||||| ||:||   ||||| ||||||||||||||||||||: ||
Db        241 NKTCPADYTWNNHVCRCLAQHDFTFSPSAGDDSADGFHDICGPNKELDEETCQCVCKGGL 300

Qy        300 RPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCA 359
              :  :||||||||||:|||||||||||||||| |||||||||||||:||:|||||||||||
Db        301 QASSCGPHKELDRDSCQCTCKKTCPRNQPLNPGKCA 360

Qy        360 CECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||:|||| |||||| |||||||||||||| | || | |:||||||||||||||| ::
Db        361 CECTENPQKCFLKGKKFHHQTCSCYRRPCTNRVKHCEQGLSFSEEVCRCVPSYWKRPHVN 420


RESULT      2
O57352
ID   O57352      PRELIMINARY;      PRT;   418 AA.
AC   O57352;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN   VEGF-C.
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Coturnix.
OX   NCBI_TaxID=93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98167900; PubMed=9435294;
RA   Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA   Alitalo K., Le Douarin N.M.;
RT   "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT   of the differentiation of VEGFR2-expressing endothelial cell
RT   precursors.";
RL   Development 125:743-752(1998).
DR   EMBL; Y15837; CAA75799.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000476; Glyco_hormone.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00067; GHA; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     31       POTENTIAL.
FT   CHAIN       111    418       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   418 AA;  46839 MW;  099BECC79151BF2B CRC64;

  Query Match             77.9%;  Score 1819.5;  DB 13;  Length 418;
  Best Local Similarity   76.2%;  Pred. No. 5.3e-164;
  Matches  320;  Conservative   38;  Mismatches   59;  Indels    3;  Gaps    3;

Qy          1 MHLLGFFSVACSLLAAALLPGPREAPAAAAAFESGLDLSDAEPDAGEATAYASKDLEEQL 60
              ||||   |: | | | |:| |||: |  ||:|||     : || |||  |:|||||||||
Db          1 MHLLEMLSLGCCLAAGAVLLGPRQ-PLVAAAYESGHGYYEEEGAGLLKAHASKDLEEQL 59

Qy         61 RSVSSVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILK 120
              ||||:|||||||||||||:|||||||||||||| ::  ::|:::::|||||||||  |:|:
Db         60 RSVSSVDELMTVLYPEYWKMFKCQLRKGGWQHNREHANLNSRTEETIKFAAAHYNTEILK 119

Qy        121 SIDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSY 180
              ||| |||||||||||||:|||||||  ||||||||||:|||||||||||||||| |:::
Db        120 SIDTEWRKTQCMPREVCVDVGKEFGATTNTFFKPPCVSTYRCGGCCNSEGLQCMNISTNY 179

Qy        181 LSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAAN 240
              :|||||||||||| ||||||:|||||||||||||||||||||||||||||||   ||   ||
Db        180 ISKTLFEITVPLSHGPKPVTVSFANHTSCRCMSKLDVYRQVHSIIRRSLPATQTQCHVAN 239

Qy        241 KTCPTNYMWNNHICRCLAQEDFMFSSDAGD-DSTDGFHDICGPNKELDEETCQCVCRAGL 299
              |||| |::||| |||||| || |||   || |:::||| ||||||||||||||||||: |:
Db        240 KTCPKNHVWNNQTCRCLAQHDFGFSSHLGDSDTSEGFH-TCGPNKELDEETCQCVCKGGV 298

Qy        300 RPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQPLNPGKCA 359
              || ||||||||| ||||:||||| || || |:||||   ||||||:|||:: |||| ||
Db        299 RPTSCGPHKELDRASCQCMCKNKLLPSSCGPNKEFDEKTCQCVCKKTCPKHHPLNPAKCT 358

Qy        360 CECTESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCVPSYWKRPQMS 419
              |||||| || ||||:||||||||||| ||| | | |: ||  :||||||| : |||| |:
Db        359 CECTESPNKCFLKGKRFHHQTCSCYRPPCTVRTKRCDAGFLLAEEVCRCVRTSWKRPLMN 418


RESULT      3
O43915
ID   O43915      PRELIMINARY;      PRT;   354 AA.
AC   O43915;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   GROWTH FACTOR FIGF.
GN   FIGF OR VEGF-D.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98140120; PubMed=9479493;
RA   Rocchigiani M., Lestingi M., Luddi A., Orlandini M., Franco B.,
RA   Rossi E., Ballabio A., Zuffardi O., Oliviero S.;
RT   "Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1
RT   between the PIGA and the GRPR genes.";
RL   Genomics 47:207-216(1998).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LUNG;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98118549; PubMed=9435229;
RA   Achen M.G., Jeltsch M., Kukk E., Maekinen T., Vitali A., Wilks A.F.,
RA   Alitalo K., Stacker S.A.;
RT   "Vascular endothelial growth factor D (VEGF-D) is a ligand for the
RT   tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4).";
RL   Proc. Natl. Acad. Sci. U.S.A. 95:548-553(1998).
DR   EMBL; Y12864; CAA73371.1; -.
DR   EMBL; Y12865; CAA73371.1; JOINED.
DR   EMBL; Y12866; CAA73371.1; JOINED.
DR   EMBL; Y12867; CAA73371.1; JOINED.
DR   EMBL; Y12868; CAA73371.1; JOINED.
DR   EMBL; Y12869; CAA73371.1; JOINED.
DR   EMBL; Y12870; CAA73371.1; JOINED.
DR   EMBL; D89630; BAA24264.1; -.
DR   EMBL; AJ000185; CAA03942.1; -.
DR   EMBL; Y12863; CAA73370.1; -.
DR   HSSP; P15692; 1VPF.
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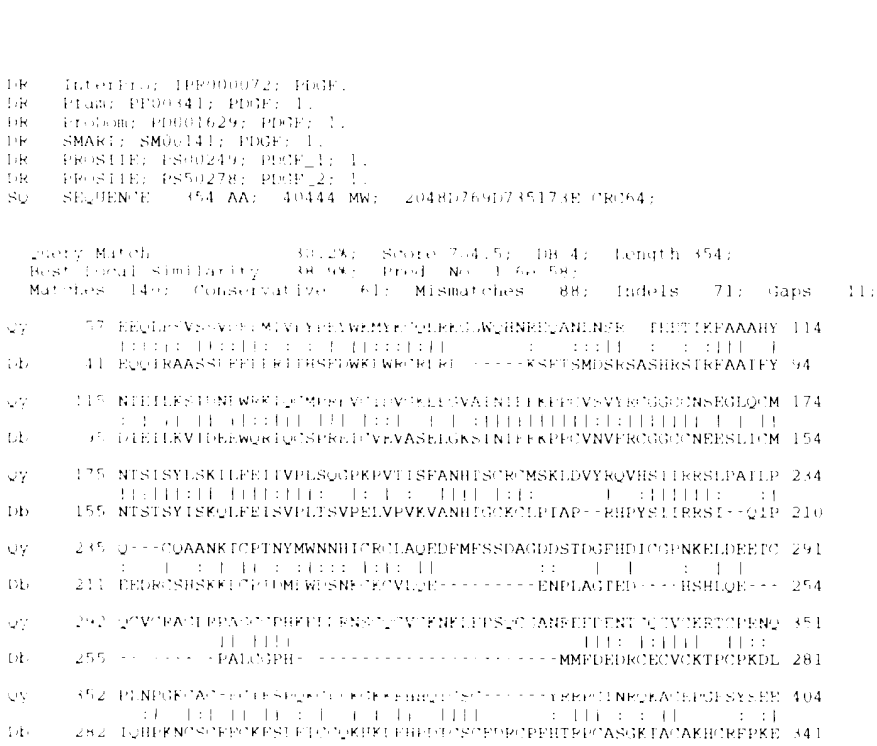

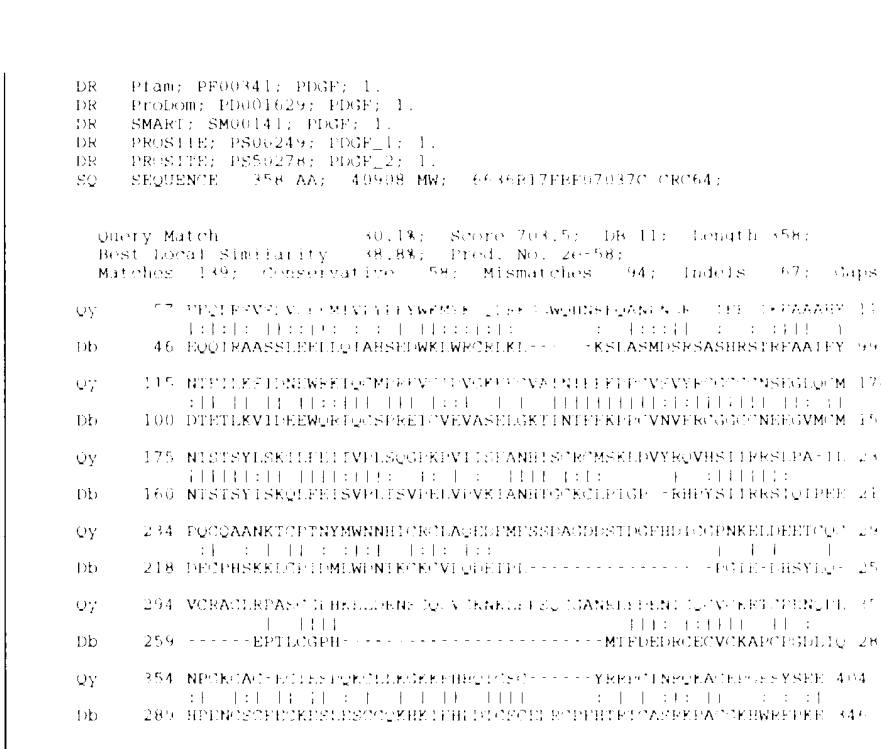

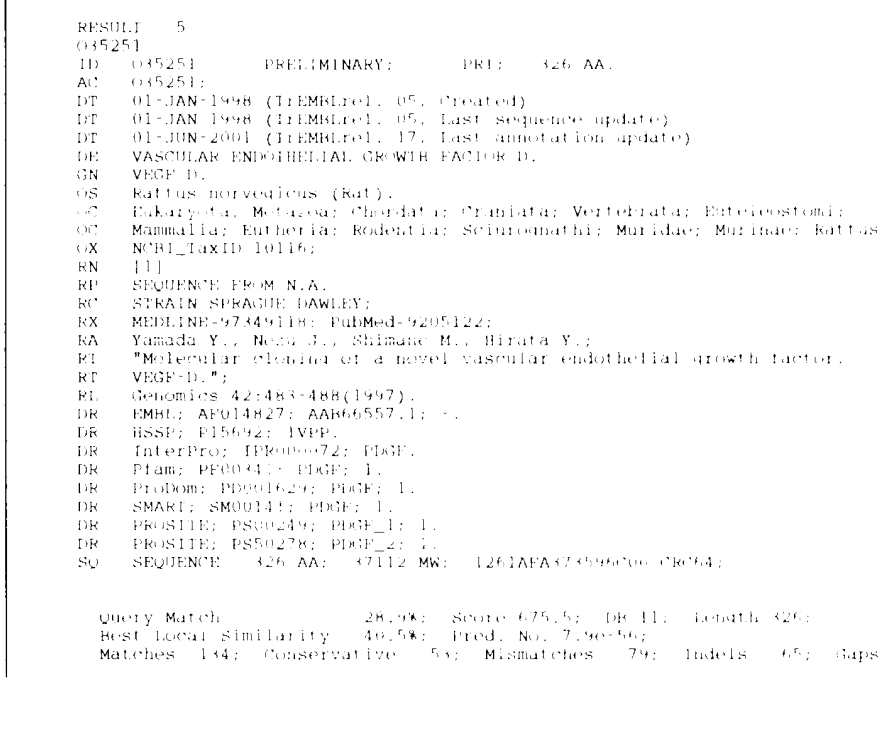

```
Qy         57 FEQLESVSSVDELMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSR   TEELIKFAAAHY 114
              |:|:|: |:::||: | : | ||:::|:|:              :  ||::||  :   : :||| |
Db         46 EQQIFAASILEELLQVAHSEDWKLWRCRLKL       - KSLANVDSRSISHRSIRFAAIFY 99

Qy        115 NTEILKSILNEWRKTQCMPREVCIDVGKLFGVAINTFKPPCVSVYRCGGCCNSEGLQCM 174
              :|| || || ||::||| ||| |::|   | |   ||||||||||:|:||||||| | : ||
Db        100 DIEILKVIDEEWQRTQCSPRETCVEVASELGKTTNTFFKPPCVNVFRCGGCCNEESVMCM 159

Qy        175 NTSTSYLSKTLFEIIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLP 234
              ||||||:|| ||||:|||:   |: |  :    |||| |:|:          |   :||||||:    :|
Db        160 NISTSYISKQLFEISVPLTSVPELVPVKIANHTGCKCLPTGP- RHPYSIIRRSI--QIP 215

Qy        235      QCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETC 291
                   ||   :  |  ||  :  :|:|   |:|:  |:              ::     |   |      :   |  |
Db        216 EEDQCPHSKKLCPVDMLWDNTKCKCVLQD           ENFLPGTED     HSYLQL     259

Qy        292 QCVCRAGLRPASCGPHKELDRNSCQCVCKNKLFPSQCGANREFDENTCQCVCKRTCPRNQ 351
                         *| ||||                                   |||: |:||||  || :
Db        260                PADCGPH                  -       MMFDEDRCECVCKAPCPGDL 286

Qy        352 PLNPGKCACECTESPQKCLLKGKKFHHQTC 381
                  :|   |:| || ||  : |    |  |  ||   ||
Db        287 IQHPENCSCECKESLESCCQKHKMFHPDTC 317


RESULT    6
O35757
ID   O35757         PRELIMINARY;      PRT;   126 AA.
AC   O35757;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C (FRAGMENT).
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID 10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN SPRAGUE DAWLEY; TISSUE LUNG;
RA   Mandriota S.J., Pepper M.S.;
RL   Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF010302; AAB63248.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1      1
FT   NON_TER     126    126
SQ   SEQUENCE   126 AA;  13977 MW;  8F365AFBC4E037B0 CRC64;

  Query Match             27.1%;  Score 634;  DB 11;  Length 126;
  Best Local Similarity   88.1%;  Pred. No. 2.2e-52;
  Matches  111;  Conservative   10;  Mismatches    5;  Indels    0;  Gaps    0;

Qy        157 VSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLD 216
              |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db          1 VSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLD 60

Qy        217 VYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDFMFSSDAGDDSTDGF 276
              |||||||||||||||||||||||||||||| ||:|||::|:||||:|||:| |:   |||::||
Db         61 VYRQVHSIIRRSLPATLPQCQAANKTCPANYVWNNYMCQCLAQQDFIFYSNVEDDSNGF 120

Qy        277 HDICGP 282
              ||:|||
Db        121 HDVCGP 126


RESULT    7
Q94446
ID   Q94446         PRELIMINARY;      PRT;  1704 AA.
AC   Q94446;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   220 KDA SILK PROTEIN.
GN   SP220.
OS   Chironomus thummi thummi (Midge).
OC   Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC   Pterygota; Neoptera; Endopterygota; Diptera; Nematocera;
OC   Chironomoidea; Chironomidae; Chironominae; Chironomus.
OX   NCBI_TaxID 7155;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE SALIVARY GLAND;
RA   Case S.T., Cox C., Bell W.C., Hoffman R.T., Martin J., Hamilton K.;
RL   Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; U54641; AAA99804.1; -.
DR   InterPro; IPR000561; EGF-like.
DR   InterPro; IPR000853; Mtllthion nemat.
DR   PRINTS; PR00876; MTNEMATODE.
DR   PROSITE; PS00022; EGF_1; UNKNOWN_2.
DR   PROSITE; PS01186; EGF_2; UNKNOWN_1.
SQ   SEQUENCE   1704 AA;  185745 MW;  3A3F20247C8F1E28 CRC64;

  Query Match             11.5%;  Score 269.5;  DB 5;  Length 1704;
  Best Local Similarity   22.8%;  Pred. No. 1.5e-16;
  Matches   79;  Conservative   48;  Mismatches  123;  Indels   97;  Gaps   16;

Qy        129 IQCMPREVCIDVGKEFGVATNTFFKPPCVSVYR      CGGCCNSEGLQCMNTSTSYLSK 183
              | |  ::  |:    | | |       :| |:  :|        ||  |: :  |                  |
Db       1079 INCPAKQITISGECGCEI     RPKCLPCPRESNLECCVCPEKKCQ             CK 1125

Qy        184 TLFEITV---  ---  ---  ---        PLS      QGPKPVT      ISFANHTSCRCMS 213
               :|:                                   |:        :  |||          :     |      |:|
Db       1126 QTTPKNLCKCKCPNEKPCPSCGKCPPCPVPCSCKCESPKEANCCPGVQEWNEPKCKCEC 1185

Qy        214 KLDVYRQV-----HSIIRRSLPATLPQCQAAN      -     -         KTCPTNYM 248
                |     :                :      :       |      |  |  |:                 |  ||  |   :
Db       1186 PKDKSKIICEGGQKWNDNQCQCCPIPAPICSASQKYSNVICSCGCNPGMPAKGCPGNQV 1245

Qy        249 WNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHK 308
              |   :  |:|:   ::      :|                    || ||    :::  |:|  |:  |      | |      :
Db       1246 WCENCCQCVCPKNMEKPADN------------CC NEWWNCEACECECFPCCPEACCKGVQ 1293

Qy        309 ELDRNSCQCVC-KNKLFPSQCGANREFDENTCQCVCKRT      CPRNQPLNPGKCACEC 362
              : ::|:| | |     |   |: ||    :  :  ::| |  ||                ||  ||    |      |  ||
Db       1294 KWNKNTCACECPPCKATPASCGKKSWNPDSCSCQCKSKMPCCCCPSNQQWNCEICKCEC 1353

Qy        363 TESPQKCLLKGKKFHHQTCSCYRRPCTNRQKACEPGFSYSEEVCRCV 409
               :    | |    |: :   ||| |      | | :    |         :   :  |:||
Db       1354 S-GIQIC PAGQSWDSQICQC-SCPAIGK    CIGAQEWCAKQCKCV 1394


RESULT    8
Q94438
ID   Q94438         PRELIMINARY;      PRT;  1698 AA.
AC   Q94438;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   185 KDA SILK PROTEIN.
GN   SP185.
OS   Chironomus pallidivittatus (Midge).
OC   Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
OC   Pterygota; Neoptera; Endopterygota; Diptera; Nematocera;
OC   Chironomoidea; Chironomidae; Chironominae; Chironomus.
OX   NCBI_TaxID 7151;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE SALIVARY GLAND;
RA   Case S.T., Cox C., Bell W.C., Hoffman R.T., Martin J., Hamilton K.;
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RL   Submitted (APR-1996) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; U54640; AAA99803.1; -.
DR   InterPro; IPR002561; EGF like.
DR   InterPro; IPR000853; Metallothion_nemat.
DR   PRINTS; PR00876; MTNEMATODE.
DR   PROSITE; PS00022; EGF_1; UNKNOWN_1.
SQ   SEQUENCE   1698 AA;  196164 MW;  82AF08380D9E2C6GE CRC64;

  Query Match             10.8%;  Score 252;  DB 5;  Length 1698;
  Best Local Similarity   21.2%;  Pred. No. 6.6e-15;
  Matches   88;  Conservative   40;  Mismatches  123;  Indels  164;  Gaps   17;

Qy        128 INPWR-----K[illegible]MPREVC[illegible]IDVGKEFGVAINIFFKPPCVSVYR      CGGCCNSEGL 171
Db       1061 INQCK[illegible]PQVNIK[illegible]      QIKNCFEWSNL[illegible]LCDEKKC 1116

Qy        172 QCMNISTSYLSKILFEIIV----------------------PLS-----QGPKPVT----I 201
Db       1117 Q---------GNQV[illegible]NNI[illegible]NQKP[illegible]GNGNDFC[illegible]SPKPANGCPGV 1167

Qy        202 SFANHTSCRCMSKIDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQED 261
Db       1168 QEWNEEK[illegible]-----------------------F[illegible]----KQCPGQQPWNNHI[illegible]QCCPTP 1206

Qy        262 FMFSSDAGDDSTDGFHDICGPNKELD----------EETCQCVCRAGL-------------- 299
Db       1207 APICSNFQFYSNVS[illegible]W[illegible]NI[illegible]VC[illegible]ENMP[illegible]ANNCSKWWN 1266

Qy        300 -------------------------------------RPASCGPHKELDRNSCQCVCKNKLF 324
Db       1267 DFM[illegible]VMFWNANI[illegible]PAC[illegible]PAS[illegible]SWN[illegible]QCKSKMP 1326

Qy        325 PSQCGANREFDENTCQCVC--KRTCPRNQPLNPGKCACECTESPQ              KCL 370
Db       1327 [illegible]NQWNEKT[illegible]SAK[illegible]CPAGQWN[illegible]CA[illegible]CGAQWCSKACKCV 1386

Qy        371 LKGKK-------FHHQTCSCYRRPCTNRQK----ACEPGFSYSE-----EVCRCVP 410
Db       1387 CPAQK[illegible]WDESS[illegible]---Q[illegible]PENM[illegible]NA[illegible]WP[illegible]CAAVP 1439

RESULT   9
Q9H1W9
ID   Q9H1W9      PRELIMINARY;      PRT;   232 AA.
AC   Q9H1W9;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   DJ261G23.6.3 (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AL136131; CAC19512.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   232 AA;  27042 MW;  FB49F364446F4D01 CRC64;

  Query Match             10.2%;  Score 238.5;  DB 4;  Length 232;
  Best Local Similarity   24.7%;  Pred. No. 1.2e-14;
  Matches   70;  Conservative   33;  Mismatches  101;  Indels   79;  Gaps   10;

Qy         69 IMTVLYPEYWKMYKCQ[illegible]NEEGANIN[illegible]KKFAAAHYNTEILKSIDNEWRK 128
Db         14 LLLYLHHAKWSQAAPMAEGGGQNHH                 EVVKFM              DVYQR 49

Qy        129 TQCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKILFEI 188
Db         50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy        189 TVPLSQGPKPVTISFANHTSCRCMSKIDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYM 248
Db        110 KP  HQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVRGK      GKGQKRKRKKSRYKS 162

Qy        249 WNNHI-CRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGL-RPASCGP 306
Db        163 WSVYVGARC----------------------------------CLMPWSLPGPHPCGP 186

Qy        307 HKE--   -  -LDRNSCQCVCKNKLFPSQCGANR EFDENTCQC 341
Db        187 CSERRKHLFVQDPQTCKCSCKNT  DSRCKARQLELNERTCRC 227

RESULT   10
Q16889
ID   Q16889      PRELIMINARY;      PRT;   254 AA.
AC   Q16889;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (FRAGMENT).
GN   VEGF 206.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE 92168017; PubMed 1791831;
RA   Houck K.A., Ferrara N., Winer J., Cachianes G., Li B., Leung D.W.;
RT   "The vascular endothelial growth factor family: identification of a
RT   fourth molecular species and characterization of alternative splicing
RT   of RNA.";
RL   Mol. Endocrinol. 5:1806-1814(1991).
DR   EMBL; S85192; AAC63102.1; -.
DR   EMBL; S85224; AAC63101.1; -.
DR   EMBL; S85199; AAC63101.1; JOINED.
DR   EMBL; S85201; AAC63101.1; JOINED.
DR   EMBL; S85219; AAC63101.1; JOINED.
DR   EMBL; S85222; AAC63101.1; JOINED.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1      1
SQ   SEQUENCE   254 AA;  29461 MW;  069DFE9B9723DBA8 CRC64;

  Query Match             10.2%;  Score 238.5;  DB 4;  Length 254;
  Best Local Similarity   24.7%;  Pred. No. 1.4e-14;
  Matches   70;  Conservative   33;  Mismatches  101;  Indels   79;  Gaps   10;

Qy         69 IMTVLYPEYWKMYKCQ[illegible]NEEGANIN[illegible]KKFAAAHYNTEILKSIDNEWRK 128
Db         36 LLLYLHHAKWSQAAPMAEGGGQNHH---------EVVKFM-------DVYQR 71

Qy        129 TQCMPREVCIDVGKEFGVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKILFEI 188
Db         72 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 131

Qy        189 TVPLSQGPKPVTISFANHTSCRCMSKIDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYM 248
```

```
Db     130 KP  HQQQHICEMSFLQHNKCECRPKKDRAPQEEKSVRGK     GKGQKRKRKKSRYKS 184

Qy     249 WNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGP 306
               |: ::  ||                                        |:     |    |   |||
Db     185 WSVYVGARC                                         CLMPWSLPGPHPCGP 208

Qy     307 HKE          LDRNSCQCVCKNKLFPSQCGANR-EFDENTCQC 341
               |            |   :|:| ||     |:| |  : |  :| ||:|
Db     209 CSERRKHLFVQDPQTCKCSCKNT  DSRCKARQLELNERTCRC 249


RESULT 11
O60720
ID   O60720        PRELIMINARY;      PRT;    209 AA.
AC   O60720;
DT   01 AUG 1998 (TrEMBLrel. 07, Created)
DT   01 MAY 1999 (TrEMBLrel. 10, Last sequence update)
DT   01 JUN 2001 (TrEMBLrel. 17, Last annotation update)
DE   VEGF183 PROTEIN PRECURSOR (VASCULAR ENDOTHELIAL GROWTH FACTOR 183)
DE   (DJ261G23.6.6) (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=KIDNEY;
RX   MEDLINE=99096474; PubMed=9878851;
RA   Lei J., Jiang A., Pei D.;
RT   "Identification and characterization of a new splicing variant of
RT   vascular endothelial growth factor: VEGF183.";
RL   Biochim. Biophys. Acta, Gene Struct. Expr. 1443:400-406(1998).
RN   [2]
RP   SEQUENCE OF 114-209 FROM N.A.
RC   TISSUE=RETINA;
RA   Jingjing L., Roque R.S.;
RL   Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AJ010438; CAA09179.1; -.
DR   EMBL; AF062645; AAC16730.1; -.
DR   EMBL; AL136131; CAC19514.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    209       VEGF183 PROTEIN.
SQ   SEQUENCE   209 AA;  24422 MW;  F01C7EACD945D60A CRC64;

  Query Match             9.9%;  Score 231;  DB 4;  Length 209;
  Best Local Similarity   24.2%;  Pred. No. 5.6e-14;
  Matches   68;  Conservative   28;  Mismatches   87;  Indels   98;  Gaps    9;

Qy      69 LMIVLYPEYWKMYKCQLRKGGWQHNREQANLNSRTEEIIKFAAAHYNTEILKSIDNEWRK 128
               |:  |:    |              || |:                  | :||                  : :::
Db      14 LLLYLHHAKWSQAAPMAEGGGQNHH              EVVKFM                DVYQR 49

Qy     129 TQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEI 188
               : |  |  |   .|: :|:          ||| || : |||||| |||:|: |   | ::   :  |
Db      50 SYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEESNITMQIMRI 109

Qy     189 TVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYM 248
               ||          :|  |  | |  | |   ||       :|
Db     110 KP  HQGQHIGEMSFLQHNKCECRPKKDRAPQEEKSVR-                  --- 145

Qy     249 WNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHK 308
                                                         |  :      |  ||  |||
Db     146 ------------------------         GKGKGQKRK      RKKSRP  CGPCS 165

Qy     309 E         LDRNSCQCVCKNKLFPSQCGANR-EFDENTCQC 341
               |           :  ::|:| |||    |:| |  : |  :| ||:|
Db     166 ERRKHLFVQDPQTCKCSCKNT  DSRCKARQLELNERTCRC 204


RESULT 12
Q9XSF4
ID   Q9XSF4        PRELIMINARY;      PRT;    208 AA.
AC   Q9XSF4;
DT   01 NOV 1999 (TrEMBLrel. 12, Created)
DT   01 NOV 1999 (TrEMBLrel. 12, Last sequence update)
DT   01 JUN 2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 182.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Jingjing L., Roque R.S.;
RL   Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF133249; AAD29683.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   208 AA;  24400 MW;  CF77AC591F5C2BBE CRC64;

  Query Match             9.7%;  Score 226.5;  DB 6;  Length 208;
  Best Local Similarity   24.4%;  Pred. No. 1.5e-13;
  Matches   66;  Conservative   26;  Mismatches   81;  Indels   97;  Gaps    9;

Qy      85 LRKGGWQHNREQANLNSRTEEIIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
                |    |          |      :  | :||                  : :::: |  |  |   :|: :|: :|:
Db      18 LHHAKWSQAAPMAGGEHKPHEVVKFM        ------ DVYQRSYCRPIETLVDIFQEY 64

Qy     145 GVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL      SQGPKPV 199
                       ||| || : |||||| |||:|: |             | ||: :          ||
Db      65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-          ENITMQIMRIKPHQGQHIG 117

Qy     200 TISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQ 259
                 :||  :|  : |  |  ||     :|
Db     118 EMSFLQHSKCECRPKKDRAKQEKKSVR   -                                      144

Qy     260 EDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE          LDR 312
                                      |  |       :          |   ||  |||  |                    |
Db     145                -  -       - GKGKGQKRK          RKKSRP- CGPCSERRKHLFVQDP 175

Qy     313 NSCQCVCKNKLFPSQCGANR-EFDENTCQC 341
                 :|:| |||    |:| |  : |  :| ||:|
Db     176 QTCKCSCKNT  DSRCKARQLELNERTCRC 203


RESULT 13
Q9MYV3
ID   Q9MYV3        PRELIMINARY;      PRT;    214 AA.
AC   Q9MYV3;
DT   01 OCT 2000 (TrEMBLrel. 15, Created)
DT   01 OCT 2000 (TrEMBLrel. 15, Last sequence update)
DT   01 JUN 2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 188 PRECURSOR.
GN   VEGF.
```

```
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID 9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE 20125516; PubMed 10661874;
RA   Scheidegger P., Weiglhofer W., Suarez S., Kaser-Hotz B., Steiner R.,
RA   Ballmer-Hofer K., Jaussi R.;
RT   "Vascular endothelial growth factor (VEGF) and its receptors in tumor-
RT   bearing dogs.";
RL   Biol. Chem. 380:1449-1454(1999).
DR   EMBL; AJ133758; CAB82426.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
SQ   SEQUENCE   214 AA;  25175 MW;  A7A5AI7874B27 CRC64;

  Query Match             9.7%;  Score 226.5;  DB 6;  Length 214;
  Best Local Similarity   24.4%;  Pred. No. 1.5e-14;
  Matches   67;  Conservative   26;  Mismatches   77;  Indels  109;  Gaps    9;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
              |    |       |     :  |  :||                  : :::: | | |  :|: :|:
Db         18 LHHAKWSQAAPMAGGEHKPHEVVKFM--------------DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL      SQGPKPV 199
                     ||| ||  : ||||:|| |||:|: |              | ||: :      ||
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-------FNITMQIMRIKPHQGQHIG 117

Qy        200 TISFANHTSCRCMSKLDVYRQVHSIIRR--          RSLPATLPQCQAANKTCPTN 246
                :||  |: | |   | |   ||      ||          |  | ::|
Db        118 EMSFLQHSKCECRPKKDRARQEKKSIRGKGKGQKRKRKRSRYKPWSVP------------ 165

Qy        247 YMWNNHICRCLAQEDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGP 306
                                                ||| |
Db        166 -------------------------------CGPCSE--------------------R 172

Qy        307 HKEL   DRNSCQCVCKNKLFPSQCGANREFDENTCQC 341
                 ::   |  :|:| |||     |:| | : | :| ||:|
Db        173 RKHLFVQDPQTCKCSCKNT  DSRCKARQLELNERTCRC 209


RESULT 14
Q9XSF5
ID   Q9XSF5      PRELIMINARY;      PRT;   214 AA.
AC   Q9XSF5;
DT   01-NOV-1999 (TrEMBLrel. 12, Created)
DT   01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Jingjing L., Roque R.S.;
RL   Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF133250; AAD29684.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   214 AA;  25151 MW;  226998IAFBC60058 CRC64;

  Query Match             9.5%;  Score 221.5;  DB 6;  Length 214;
  Best Local Similarity   23.7%;  Pred. No. 4.6e-13;
  Matches   64;  Conservative   29;  Mismatches   86;  Indels   91;  Gaps    8;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
              |    |       |     :  | :||                  : :::: | | |  :|: :|:
Db         18 LHHAKWSQAAPMAGGEHKPHEVVKFM--------------DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL      SQGPKPV 199
                     ||| ||  : |||||| |||:|: |              | ||: :      ||
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTEE-------FNITMQIMRIKPHQGQHIG 117

Qy        200 TISFANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQ 259
                :||  |: | |   | |   ||      :|
Db        118 EMSFLQHSKCECRPKKDRARQEKKSVR---------------------------- 144

Qy        260 EDFMFSSDAGDDSTDGFHDICGPNKELDEETCQCVCRAGLRPASCGPHKE---   LDR 312
                                   | |    :   :   ::   |  |||  |        |
Db        145 --------------------GKGKGQKRKRKRSRYKSWSVP--CGPCSERRKHLFVQDP 181

Qy        313 NSCQCVCKNKLFPSQCGANREFDENTCQC 341
               :|:| ||     |:| | : | :| ||:|
Db        182 QTCKCSCKNT--DSRCKARQLELNERTCRC 209


RESULT 15
Q9GKR0
ID   Q9GKR0      PRELIMINARY;      PRT;   190 AA.
AC   Q9GKR0;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 165.
OS   Equus caballus (Horse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX   NCBI_TaxID 9796;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Miura N., Misumi K., Kawahara K., Nakashima M., Fukumitsu S.,
RA   Kawabata H., Uto N., Oka T., Maruyama I., Sakamoto H.;
RT   "Cloning of cDNA and High-Level Expression of Equine Vascular
RT   Endothelial Growth Factor (VEGF).";
RL   Submitted (JAN-2001) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AB053350; BAB20890.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   190 AA;  22312 MW;  87E9E1614 39E5F87 CRC64;

  Query Match             9.4%;  Score 220.5;  DB 6;  Length 190;
  Best Local Similarity   23.6%;  Pred. No. 5e-13;
  Matches   62;  Conservative   27;  Mismatches   73;  Indels  101;  Gaps    8;

Qy         85 LRKGGWQHNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEF 144
              |    |       |     :| | :||                  : :::: | | |  :|: :|:
Db         18 LHHAKWSQAAPMAEGEHKTHEVVKFM-------------DVYQRSYCRPIETLVDIFQEY 64

Qy        145 GVAINTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTIS 202
                     ||| ||  : |||||| |||:|: |:    ::  :  |      ||  |     :|
Db         65 PDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTAEFNITMQIMRIKPHQSQHIG--  EMS 120

Qy        203 FANHTSCRCMSKLDVYRQVHSIIRRSLPATLPQCQAANKTCPTNYMWNNHICRCLAQEDF 262
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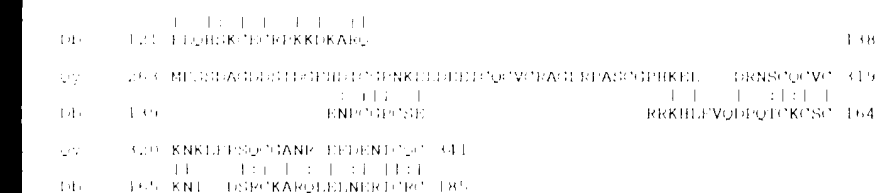

Search completed: December 26, 2001, 11:43:07
Job time: 8.0 secs

GenCore version 4.5

oM protein - protein search, using sw model

Run on: December 26, 2001, 11:28:07 ; Search time 172.82 Seconds
(without alignments)
48.268 Million cell updates/sec

Title: US-09-534-376A-8_COPY_161_227
Perfect score: 862
Sequence: 1 R[illegible]NSESL[illegible]MNTGTSY.....G[illegible]MSKLDVYK[illegible]VHSTIKR 427

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073200 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0
Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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2: [illegible]:* *
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5: [illegible]:* *
6: [illegible]:* *
7: [illegible]:* *
8: [illegible]:* *
9: [illegible]:* *
10: [illegible]:* *
11: [illegible]:* *
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16: [illegible]:* *
17: [illegible]:* *
18: [illegible]:* *
19: [illegible]:* *
20: [illegible]:* *
21: [illegible]:* *
22: [illegible]:* *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	862	100.0	292	20	AAW86225	Human VEGF-C trunc
2	862	100.0	297	20	AAW86224	Human VEGF-C trunc
3	862	100.0	302	20	AAW86223	Human VEGF-C trunc
4	862	100.0	307	20	AAW86222	Human VEGF-C trunc
5	862	100.0	418	20	AAY06284	Human growth facto
6	862	100.0	353	16	AAB82086	Vascular endotheli
7	862	100.0	358	20	AAY30519	A truncated vascul
8	862	100.0	360	20	AAY22321	Truncated human VE
9	862	100.0	365	21	AAY97145	Truncated vascular
10	862	100.0	365	22	AAY97527	Human VEGF-2 prote
11	862	100.0	399	20	AAW86237	Human VEGF-C full
12	862	100.0	419	18	AAW17837	Human foetal liver
13	862	100.0	419	18	AAW00932	Human Flt4 recepto
14	862	100.0	419	18	AAW13833	Human vascular end
15	862	100.0	419	18	AAW11478	Human vascular end
16	862	100.0	419	19	AAW75751	Vascular endotheli
17	862	100.0	419	19	AAW75740	Human vascular end
18	862	100.0	419	20	AAY40118	Vascular endotheli
19	862	100.0	419	20	AAY22320	Full length human
20	862	100.0	419	20	AAW86203	Human vascular end
21	862	100.0	419	21	AAB10648	Human VEGF protein
22	862	100.0	419	21	AAR29048	Human VEGF-C prote
23	862	100.0	419	21	AAY97144	Vascular endotheli
24	862	100.0	419	21	AAY70749	Human prepro vascu
25	862	100.0	419	21	AAY70982	Human vascular end
26	862	100.0	419	22	AAY97520	Human VEGF-B prote
27	862	100.0	419	22	AAB87605	Human VEGF-2. Hom
28	858	99.5	415	19	AAW75742	Mouse vascular end
29	853	99.0	415	18	AAW00933	Mouse Flt4 recepto
30	845	98.0	418	18	AAW30934	Quail Flt4 recepto
31	845	98.0	418	19	AAW75743	Quail vascular end
32	297	82.0	113	20	AAY08285	Human growth facto
33	215	59.4	321	19	AAW53243	Mus musculus vascu
34	215	59.4	337	20	AAY08286	Human growth facto
35	215	59.4	358	18	AAW14992	Murine c-Fos induc
36	215	59.4	358	19	AAW53242	Mus musculus vascu
37	215	59.4	358	19	AAW44295	Mouse vascular end
38	211	58.8	325	19	AAW53240	Homo sapiens vascu
39	211	58.8	325	22	AAY97572	Human VEGF 1 prote
40	211	58.8	354	19	AAW19036	Human zyxin2 growt
41	211	58.8	354	19	AAW53241	Homo sapiens vascu
42	211	58.8	354	20	AAW44293	Human vascular end
43	211	58.8	354	21	AAB10649	Human VEGD protein
44	211	58.8	354	21	AAR29049	Human VEGF D prote
45	211	58.8	354	21	AAY70751	Human prepro vascu

ALIGNMENTS

RESULT 1
AAW86225
ID AAW86225 standard; p; [illegible] AA.
XX
AC AAW86225;
XX
DT 26-FEB-1999 (first entry)
XX
DE Human VEGF-C truncated fragment 4.
XX
KW VEGF; VEP; vascular endothelial growth factor; VEGF-related protein;
KW [illegible]; [illegible]; proliferation; angiogenesis; cardiac; haemia;
KW [illegible]; collateral vessel development; cell growth; migration; heart;
KW lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW wound healing; skin; vascular permeability.
XX
OS Homo sapiens.
XX
PN WO9849300-A2.
XX
PD 05-NOV-1998.
XX
PF 20-APR-1998; 98WO-US07801.
XX
PR 25-APR-1997; 97US-0842984.
XX
PA (COLL-) COLLATERAL THERAPEUTICS.
XX
PI Rohlen P;
XX
DR WPI; 1999-06942[illegible]/01.
XX
PT New truncated vascular endothelial growth factor-related protein
PT subunits - lack part of the N terminal sequence, used to stimulate

```
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2b; 114pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF) related protein) subunits that have at least one amino
CC   acid N terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86222 to AAW86225 represent truncated
CC   fragments of VEGF C.
XX
SQ   Sequence   292 AA;


  Query Match             100.0%;  Score 362;  DB 20;  Length 292;
  Best Local Similarity   100.0%;  Pred. No. 1.8e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      34 rcqqccnseglqcmntstsylskttlfeitvplsqgpkpvtistanhtscrcmskldvyrq 93

Qy      61 VHSIIRR 67
           |||||||
Db      94 vhsiirr 100


RESULT   2
AAW86224
ID   AAW86224 standard; protein; 297 AA
XX
AC   AAW86224;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF C truncated fragment 3.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor related protein
PT   subunits - lack part of the N terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2b; 114pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF)-related protein) subunits that have at least one amino
CC   acid N terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86222 to AAW86225 represent truncated
CC   fragments of VEGF C.
XX
SQ   Sequence   297 AA;


  Query Match             100.0%;  Score 362;  DB 20;  Length 297;
  Best Local Similarity   100.0%;  Pred. No. 1.8e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      39 rcqqccnseglqcmntstsylskttlfeitvplsqgpkpvtistanhtscrcmskldvyrq 98

Qy      61 VHSIIRR 67
           |||||||
Db      99 vhsiirr 105


RESULT   3
AAW86223
ID   AAW86223 standard; protein; 302 AA.
XX
AC   AAW86223;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF C truncated fragment 2.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-009426/01.
XX
PT   New truncated vascular endothelial growth factor-related protein
PT   subunits - lack part of the N terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2b; 114pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF) related protein) subunits that have at least one amino
```

```
CC   acid N-terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86222 to AAW86225 represent truncated
CC   fragments of VEGF-C.
XX
SQ   Sequence   302 AA;

  Query Match             100.0%;  Score 362;  DB 20;  Length 302;
  Best Local Similarity   100.0%;  Pred. No. 1.9e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCVSSGNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      44 RCVSSGNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 103

Qy      61 VHSIIRR 67
           |||||||
Db     104 VHSIIRR 110


RESULT   4
AAW86222
ID   AAW86222 standard; protein; 307 AA.
XX
AC   AAW86222;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF-C truncated fragment 1.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9847540-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US07801.
XX
PR   25-APR-1997;   97US-0842084.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-001420/01.
XX
PT   New truncated vascular endothelial growth factor related protein
PT   subunits - lack part of the N terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2; 114pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF) related protein) subunits that have at least one amino
CC   acid N-terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86222 to AAW86225 represent truncated
CC   fragments of VEGF-C.
XX
SQ   Sequence   307 AA;

  Query Match             100.0%;  Score 362;  DB 20;  Length 307;
  Best Local Similarity   100.0%;  Pred. No. 1.9e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCVSSGNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
             |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      49 RCVSSGNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 108

Qy      61 VHSIIRR 67
           |||||||
Db     109 VHSIIRR 115


RESULT   5
AAY08284
ID   AAY08284 standard; Protein; 318 AA.
XX
AC   AAY08284;
XX
DT   14-JUL-1999  (first entry)
XX
DE   Human growth factor protein fragment VEGF-C.
XX
KW   Growth factor; human; dimer; cysteine knot; cellular inclusion body;
KW   pharmaceutical.
XX
OS   Homo sapiens.
XX
PN   DE19748734-A1.
XX
PD   06-MAY-1999.
XX
PF   05-NOV-1997;   97DE-1048734.
XX
PR   05-NOV-1997;   97DE-1048734.
XX
PA   (GBFB ) GES BIOTECHNOLOGISCHE FORSCHUNG MBH.
XX
PI   Erdmann H,  Kaerst U,  Mueller C,  Rinas U,  Welch H;
XX
DR   WPI; 1999-278785/24.
XX
PT   Preparing active growth factor dimers from inclusion bodies in high
PT   yield
XX
PS   Claim 14; Page 8; 14pp; German.
XX
CC   This invention describes the novel preparation of biologically active
CC   dimers of recombinant human growth factors of the cysteine knot family
CC   starting from cellular inclusion bodies. Such dimers are are useful in
CC   pharmaceutical compositions and the method provides yields of 31-39.2%,
CC   in examples, compared with about 10% for the conventional method (see
CC   Biochemistry, 28 (1989) 2656). AAY08278-Y08301 are human growth factor
CC   protein fragments used in the method of the invention.
XX
SQ   Sequence   318 AA;

  Query Match             100.0%;  Score 362;  DB 20;  Length 318;
```

```
  Best Local Similarity   100.0%;  Pred. No. 1.9e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 RCQCCNSEHQCMNISTSYLSKILFEIIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         60 rcqccnseqlqcmntstsylskllfeitvplsqgpkpvtistanhtscrcmskldvyrq 119

Qy         61 VHSIIRR 67
              |||||||
Db        120 vhsiirr 126


RESULT 6
AAR82686
ID   AAR82686 standard; Protein; 350 AA.
XX
AC   AAR82686;
XX
DT   18-APR-1996  (first entry)
XX
DE   Vascular endothelial growth factor 2.
XX
KW   VEGF2; vascular endothelial growth factor; vascular permeability factor;
KW   PDGF family; angiogenesis; induce growth; bone.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..24
FT                   /label= signal peptide
FT   Protein         25..350
FT                   /label= mature protein
FT   Misc-difference 62
FT                   /note= "conserved cys"
FT   Domain          85..98
FT                   /note= "signature for the PDGF/VEGF family"
FT   Misc-difference 87
FT                   /note= "conserved cys"
FT   Misc-difference 93
FT                   /note= "conserved cys"
FT   Misc-difference 96
FT                   /note= "conserved cys"
FT   Misc-difference 97
FT                   /note= "conserved cys"
FT   Misc-difference 104
FT                   /note= "conserved cys"
FT   Misc-difference 140
FT                   /note= "conserved cys"
FT   Misc-difference 142
FT                   /note= "conserved cys"
XX
PN   WO9524473-A1.
XX
PD   14-SEP-1995.
XX
PF   12-MAY-1994;   94WO-US05291.
XX
PR   08-MAR-1994;   94US-0207550.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Fraser CM;
XX
DR   WPI; 1995-328266/42.
DR   N-PSDB; AAT03950.
XX
PT   Human vascular endothelial growth factor 2 polypeptide - used to
PT   provide diagnostic, therapeutic and/or prophylactic effects against
PT   various diseases, esp. in wound healing and periodontal disease
XX
PS   Claim 1; Fig 1A-1B; 40pp; English.
XX
CC   This full length vascular endothelial growth factor 2 (VEGF2) comprises
CC   350 amino acids of which approx. the first 24 amino acids represent the
CC   leader sequence. VEGF2 is structurally related to the VEGF/PDGF family.
CC   It is partic. important that all eight cysteines are conserved within
CC   the members of the family. In addition, the signature for the PDGF/VEGF
CC   family, PXCVXXXRCXGCCN, is conserved in VEGF2. VEGF2 induces growth of
CC   damaged bone, peridotium or ligament tissue.  It is used for the
CC   promotion of endothelialisation in vascular graft surgery.  Since
CC   angiogenesis is important in keeping wounds clean and non infected, VEGF2
CC   may be used in association with surgery and following the repair of cuts.
XX
SQ   Sequence   350 AA;

  Query Match             100.0%;  Score 362;  DB 16;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 2.2e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 RCQCCNSEHQCMNISTSYLSKILFEIIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         92 rcqccnseqlqcmntstsylskllfeitvplsqgpkpvtistanhtscrcmskldvyrq 151

Qy         61 VHSIIRR 67
              |||||||
Db        152 vhsiirr 158


RESULT 7
AAY30519
ID   AAY30519 standard; Protein; 350 AA.
XX
AC   AAY30519;
XX
DT   16-NOV-1999  (first entry)
XX
DE   A truncated vascular endothelial growth factor 2.
XX
KW   Human vascular endothelial growth factor 2; VEGF 2;
KW   vascular endothelial cell growth; endothelial cell migration;
KW   angiogenesis; blood pressure; blood flow; immune system disorder;
KW   immune cell; cancer; autoimmune disorder; blood protein disorder;
KW   ataxia telangiectasia; common variable immunodeficiency;
KW   Digeorge syndrome; HIV infection; HTLV BLV infection;
KW   leukocyte adhesion deficiency syndrome; lymphopenia;
KW   phagocyte bactericidal dysfunction; severe combined immunodeficiency;
KW   Wiskott Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW   allergy; asthma; allergic asthma.
XX
OS   Homo sapiens.
XX
PN   WO9946364-A1.
XX
PD   16-SEP-1999.
XX
PF   10-MAR-1999;   99WO-US05021.
XX
PR   13-MAR-1998;   98US-6042105.
PR   30-JUN-1998;   98US-0107997.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Cao L,  Hu J;
XX
DR   WPI; 1999-551399/46.
DR   N-PSDB; AAZ10524.
XX
PT   New human vascular endothelial growth factor 2, used for treating, e.g.
PT   immune disorders and cancers -
XX
PS   Example 2; Fig 2A-D; 222pp; English.
XX
CC   The present sequence represents a truncated, biologically active form
CC   of human vascular endothelial growth factor 2 (VEGF 2). The VEGF 2
CC   polypeptides have activities similar to VEGF. The VEGF 2 polypeptides
```

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CC   stimulate the growth of vascular endothelial cells, stimulate endothelial
CC   cell migration, stimulate angiogenesis, decrease blood pressure, and
CC   increase blood flow. The polynucleotides and polypeptides can be used
CC   for preventing, treating or ameliorating a medical condition. The
CC   VEGF-2 polypeptides or polynucleotides may be useful in treating
CC   deficiencies or disorders of the immune system, by activating or
CC   inhibiting the proliferation, differentiation, or mobilization
CC   (chemotaxis) of immune cells. The etiology of these immune deficiencies
CC   or disorders may be genetic, somatic (such as cancer or some autoimmune
CC   disorders, acquired (e.g. by chemotherapy or toxins), or infectious.
CC   Examples of immune deficiency syndromes include blood protein
CC   disorders, ataxia telangiectasia, common variable immunodeficiency,
CC   DiGeorge syndrome, HIV infection, HTLV-BLV infection, leukocyte adhesion
CC   deficiency syndrome, lymphopenia, phagocyte bactericidal dysfunction,
CC   severe combined immunodeficiency (SCIDs), Wiskott-Aldrich disorder,
CC   anemia, thrombocytopenia, or hemoglobinuria. They can also be used to
CC   modulate emostatic or thrombolytic activity. Similarly allergic reactions
CC   and conditions such as asthma (particularly allergic asthma) or other
CC   respiratory problems, may also be treated.
XX
SQ   Sequence   350 AA;

  Query Match              100.0%;  Score 362;  DB 20;  Length 350;
  Best Local Similarity    100.0%;  Pred. No. 2.2e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       92 rcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrq 151

Qy       61 VHSIIRR 67
              |||||||
Db      152 vhsiirr 158


RESULT 8
AAY22321
ID   AAY22321 standard; Protein; 350 AA.
XX
AC   AAY22321;
XX
DT   22 SEP 1999  (first entry)
XX
DE   Truncated human VEGF2 protein sequence.
XX
KW   VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW   endothelial cell proliferation; tissue damage; therapy.
XX
OS   Homo sapiens.
XX
PN   US5932540-A.
XX
PD   03-AUG-1999.
XX
PF   24-DEC-1997;   97US-0999811.
XX
PR   24-DEC-1997;   97US-0999811.
PR   08-MAR-1994;   94US-0207550.
PR   06-JUN-1995;   95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1999-443696/37.
DR   N-PSDB; AAX84838.
XX
PT   Vascular endothelial growth factor 2 for wound healing and vascular
PT   repair
XX
PS   Claim 1; Fig 2; 49pp; English.
XX
CC   This sequence is the vascular endothelial growth factor 2 (VEGF-2)
CC   of the invention. The isolated polypeptide is useful for stimulating
CC   angiogenesis, by promoting the proliferation of endothelial cells, for
CC   the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ   Sequence   350 AA;

  Query Match              100.0%;  Score 362;  DB 20;  Length 350;
  Best Local Similarity    100.0%;  Pred. No. 2.2e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy        1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       92 rcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrcmskldvyrq 151

Qy       61 VHSIIRR 67
              |||||||
Db      152 vhsiirr 158


RESULT 9
AAY97145
ID   AAY97145 standard; Protein; 350 AA.
XX
AC   AAY97145;
XX
DT   22-FEB-2001  (first entry)
XX
DE   Truncated vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;
KW   treatment; injury; degeneration; photoreceptors; eye;
KW   angioid streaks; retinitis; pigmentosa; human;
KW   age-related macular degeneration; diabetic retinopathy.
XX
OS   Homo sapiens.
XX
PN   WO200045835-A1.
XX
PD   10-AUG-2000.
XX
PF   07-FEB-2000; 2000WO-US03047.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Alderson R,  Melder R,  Roschke V,  Ruben SM;
XX
DR   WPI; 2000-532862/48.
DR   N-PSDB; AAA52081.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF-2)
XX
PS   Claim 4; Fig 2a-d; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC   etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   350 AA;

  Query Match              100.0%;  Score 362;  DB 21;  Length 350;
```

```
  Best Local Similarity   100.0%;  Pred. No. 2.2e-33;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGPCNSEGLQCMNISISYLSKTLEELTVPLSQGFKPYLTSFANHTSCKCMSKLDVYRQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 rcqgpcnseglqcmnistsylskttleltvplsqgfkpytstfanhtscrcmskldvyrq 151

Qy      61 VHSIIKR 67
           |||||||
Db     152 vhsiirr 158


RESULT  10
AAY07577
ID   AAY07577 standard; protein; 350 AA.
XX
AC   AAY07577;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF 2 protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious diseases; neurodegeneration;
KW   vascular endothelial growth factor 2; VEGF 2.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US014925.
XX
PR   04-JUN-1999;  99US-0137706.
XX
PA   (GENM-) GENENTECH INC.
XX
PI   Bosen CA;  Ruben SM;  Wu J;  Cao L;
XX
DR   WPI; 2001-072057/08.
DR   N-PSDB; AAA91910.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease
XX
PS   Disclosure; Fig 2; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor 2 (VEGF 2),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and to repair of vascular tissue,
CC   especially peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (anti)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin), and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease or haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   350 AA;


  Query Match             100.0%;  Score 362;  DB 22;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 2.2e-33;
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Qy       1 RCGGPCNSEGLQCMNISISYLSKTLEELTVPLSQGFKPYLTSFANHTSCKCMSKLDVYRQ 60
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Db      92 rcqgpcnseglqcmnistsylskttleltvplsqgfkpytstfanhtscrcmskldvyrq 151

Qy      61 VHSIIKR 67
           |||||||
Db     152 vhsiirr 158


RESULT  11
AAW86237
ID   AAW86237 standard; protein; 399 AA.
XX
AC   AAW86237;
XX
DT   16-FEB-1999  (first entry)
XX
DE   Human VEGF C full length sequence.
XX
KW   VEGF; VRP; vascular endothelial growth factor; VEGF related protein;
KW   recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW   coronary; collateral vessel development; cell growth; migration; heart;
KW   lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW   wound healing; skin; vascular permeability.
XX
OS   Homo sapiens.
XX
PN   WO9849300-A2.
XX
PD   05-NOV-1998.
XX
PF   20-APR-1998;   98WO-US007801.
XX
PR   25-APR-1997;   97US-0842984.
XX
PA   (COLL-) COLLATERAL THERAPEUTICS.
XX
PI   Bohlen P;
XX
DR   WPI; 1999-006426/01.
XX
PT   New truncated vascular endothelial growth factor related protein
PT   subunits - lack part of the N-terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2b; 114pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF) related protein) subunits that have at least one amino
CC   acid N-terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (eg skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86234 to AAW86239 represent full length VRs
CC   sequences from which the truncated fragments are created.
```

```
XX
SQ   Sequence   399 AA;


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Db     141 RCSGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 200

Qy      61 VHSIIRR 67
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Db     201 VHSIIRR 207


RESULT  12
AAW17837
ID   AAW17837 standard; Protein; 419 AA.
XX
AC   AAW17837;
XX
DT   14-JAN-1998  (first entry)
XX
DE   Human foetal liver kinase A binding protein flk-lbp.
XX
KW   Foetal liver kinase 1 binding protein; human; flk-lbp;
KW   receptor tyrosine kinase; vasculogenesis; angiogenesis;
KW   wound healing; tumour; therapy; antagonist; antibody.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..20
FT                   /label= Sig_peptide
FT   Protein         21..419
FT                   /label= Mat_protein
FT                   /note= "(Claim 10)"
FT   Peptide         21..35
FT                   /label= N-terminal
FT                   /note= "(Claim 9)"
XX
PN   WO9717442-A1.
XX
PD   15-MAY-1997.
XX
PF   05-NOV-1996;   96WO-US17584.
XX
PR   08-NOV-1995;   95US-0554471.
XX
PA   (IMMU ) IMMUNEX CORP.
XX
PI   Cohen SD;
XX
DR   WPI; 1997-281031/25.
DR   N-PSDB; AAI68811.
XX
PT   DNA encoding a human foetal liver kinase 1 binding protein - used
PT   to treat conditions with insufficient protein, deliver agents to
PT   cells and identify antagonists to treat protein-mediated conditions
XX
PS   Claim 1; Page 30-32; 43pp; English.
XX
CC   This polypeptide comprises a human foetal liver kinase 1 binding
CC   protein (flk-lbp) (see AAW17837) that binds to the receptor tyrosine
CC   kinase flk 1 expressed on vascular endothelial and other cells.
CC   The mature flk1-bp can be secreted from host cells transformed with
CC   an expression vector including an isolated flk-lbp cDNA clone (see
CC   AAI68811). Flk lbp can be used to isolate cells to which it binds,
CC   for use in studying the roles of such cells and of flk-1 in
CC   vasculogenesis and angiogenesis. Angiogenesis inhibition or
CC   increased vascularisation may be clinically desirable (e.g. to
CC   suppress solid tumour growth or in wound healing, respectively).
CC   The flk-lbp can be administered to treat conditions with defective
CC   or insufficient flk-1. Polypeptides may also act as carriers to
CC   deliver diagnostic/therapeutic agents to cells to which flk1 bp
CC   binds, to generate antibodies, and to identify flk-lbp antagonists
CC   useful for treating flk-lbp mediated conditions.
XX
SQ   Sequence   419 AA;


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Db     161 RCSGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
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Db     221 VHSIIRR 227


RESULT  13
AAW00932
ID   AAW00932 standard; Protein; 419 AA.
XX
AC   AAW00932;
XX
DT   10-NOV-1997  (first entry)
XX
DE   Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
KW   VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
KW   vascular endothelial growth factor receptor-3; ligand;
KW   angiogenesis; wound healing; lymph vessel; lymphangioma;
KW   cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..102
FT                   /label= Prepro_peptide
FT   Peptide         32..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 15)"
FT   Peptide         103..217
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 12)"
FT   Peptide         103..225
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 13)"
FT   Peptide         103..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 14)"
FT   Peptide         113..213
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 10)"
FT   Peptide         113..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 11)"
FT   Peptide         161..211
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 9)"
FT   Peptide         161..221
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 8)"
XX
PN   WO9705250-A2.
XX
PD   13-FEB-1997.
XX
PF   01-AUG-1996;   96WO-FI00427.
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XX
PR   20-JUN-1996;   96US-0671573.
PR   01-AUG-1995;   95US-0510133.
PR   12-JAN-1996;   96US-0585695.
PR   14-FEB-1996;   96US-0601142.
XX
PA   (HYHE ) UNIV HELSINKI LICENSING LTD OY.
XX
PI   Alitalo K;  Joukov V;
XX
DR   WPI; 1997-145608/13.
DR   N-PSDB; AAI84276.
XX
PT   Flt4 receptor tyrosine kinase ligand and related nucleic acid   used
PT   to modulate growth of endothelial cells and for diagnosis of
PT   endothelial cell diseases
XX
PS   Claim 7; Page 112-113; 183pp; English.
XX
CC   This polypeptide comprises the pre pro sequence of human VEGF-C,
CC   a novel ligand that binds specifically to human Flt4 receptor
CC   tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
CC   receptor.  Its sequence was deduced from a cDNA clone (AAI84276)
CC   obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL-1435)
CC   library.  The polypeptide, or its active fragments, can be
CC   expressed in transformed or transfected host cells for use in
CC   claimed methods for detecting endothelial cells (e.g. to image
CC   lymphatic vessels, endothelial venulos, Flt4 receptor in
CC   histochemical tissue) and also to modulate the growth of mammalian
CC   endothelial cells (e.g. to accelerate angiogenesis and to promote
CC   endothelial function of lymphatic vessels).  Inhibitors of
CC   VEGF-C, such as antibodies, can be used to control endothelial
CC   cell proliferation, e.g. lymphangioma or metastatic cancer.
CC   Mouse and quail VEGF-C sequences (see AAW08984-5) have also been
CC   isolated.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 362;  DB 18;  Length 419;
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Db     161 rckqecnseqlqcmntstsylskttlfeitvplsqgpkpvtistanhtscrcmskldvyrq 220

Qy      61 VHSIIRR 67
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Db     221 vhsiirr 227


RESULT  14
AAW10833
ID   AAW10833 standard; Protein; 419 AA.
XX
AC   AAW10833;
XX
DT   05-JUN-1997  (first entry)
XX
DE   Human vascular endothelial growth factor related protein VRP.
XX
KW   Vascular endothelial growth factor related protein; VRP; VEGF;
KW   receptor protein tyrosine kinase; Flt4; signal transduction;
KW   wound healing; pulmonary; rheumatoid arthritis; Kaposi's sarcoma;
KW   therapy; diagnosis; angiogenesis; monoclonal antibody.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..20
FT                   /label= Sig peptide
FT   Protein         20..419
FT                   /label= Mat_protein
FT   Misc-difference 114
FT                   /note= "deduced residue from nucleotide sequence
FT                    is tyrosine"
XX
PN   WO9709427-A1.
XX
PD   13-MAR-1997.
XX
PF   30-AUG-1996;   96WO-US14025.
XX
PR   08-SEP-1995;   95US-0003491.
XX
PA   (GEIH ) GENENTECH INC.
XX
PI   Lee J;  Wood W;
XX
DR   WPI; 1997-192902/17.
DR   N-PSDB; AAI59929.
XX
PT   Human protein similar to vascular endothelial growth factor - used
PT   to treat e.g. wounds, tumours, rheumatoid arthritis, Kaposi's
PT   sarcoma etc.
XX
PS   Claim 6; Fig 1A-1; 68pp; English.
XX
CC   A human vascular endothelial growth factor (VEGF)-related protein
CC   (VRP) (AAW10833) has been identified that binds to, and stimulates
CC   the phosphorylation of, the receptor tyrosine kinase Flt4.  It is
CC   postulated to be a third member of the VEGF protein family.  Its
CC   amino acid sequence was deduced from a cDNA clone (AAI59929) obtd.
CC   from a glioma G61 library.  Recombinant VRP can be produced in
CC   transformed host cells and used: to promote growth of vascular and
CC   lymph endothelial cells; to stimulate phosphorylation of the
CC   tyrosine kinase domain of a Flt4 receptor; as a diagnostic; as an
CC   additive to cell cultures; to screen for (anti)agonists; and to
CC   raise monoclonal antibodies used to treat conditions associated
CC   with excessive neovascularisation or vascular permeability.  VRP
CC   may make it possible to avoid coronary by pass surgery by
CC   stimulating growth of the collateral circulation.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 362;  DB 18;  Length 419;
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Qy      61 VHSIIRR 67
           |||||||
Db     221 vhsiirr 227


RESULT  15
AAW11478
ID   AAW11478 standard; Protein; 419 AA.
XX
AC   AAW11478;
XX
DT   23-APR-1997  (first entry)
XX
DE   Human vascular endothelial growth factor 2.
XX
KW   Vascular endothelial growth factor 2; VEGF2; angiogenesis;
KW   endothelialisation; coronary bypass surgery; vascular graft surgery;
KW   agonist; antagonist; therapy; diagnosis.
XX
OS   Homo Sapiens.
XX
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FT   Protein         47..419
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FT                   /note= "the mature protein is separately claimed
FT                          (Claim 5)"
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PN   WO9639515-A1.
XX
PD   12-DEC-1996.
XX
PF   06-JUN-1996;   96WO-US09001.
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PR   06-JUN-1995;   95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1997-043157/04.
DR   N-PSDB; AAT51371.
XX
PT   DNA encoding human vascular endothelial growth factor 2 - used to
PT   promote angiogenesis or endothelialisation in vascular graft surgery
XX
PS   Claim 1; Fig 2; 74pp; English.
XX
CC   Human vascular endothelial growth factor 2 (VEGF2) (AAW11478) is
CC   structurally related to the VEGF/PDGF family and is a potent
CC   mitogen for vascular endothelial cells, stimulating their growth
CC   and angiogenesis.  The amino acid sequence of VEGF2 was deduced
CC   from a cDNA clone (AAT51371) obtd. from an early stage human (week 9)
CC   embryo cDNA library.  VEGF2 polypeptides can be produced in
CC   transformed host cells and used to promote angiogenesis e.g., to
CC   stimulate the growth of transplanted tissue following coronary
CC   bypass surgery, or to promote endothelialisation in vascular graft
CC   surgery.  It can also be used to screen for antagonists (useful
CC   e.g. for tumour therapy) and agonists of VEGF2 activity.
XX
SQ   Sequence   419 AA;

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GenCore version 4.5
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SM protein - protein search, using sw model

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Title: US-09-534-376A-8_COPY_161_227
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Listing first 45 summaries

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SUMMARIES

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2	862	100.0	350	2	US-08-824-996-2	Sequence 2, Appli
3	862	100.0	350	3	US-09-042-105-4	Sequence 4, Appli
4	862	100.0	350	4	US-08-510-133A-33	Sequence 33, Appl
5	862	100.0	350	4	US-08-585-805-33	Sequence 33, Appl
6	862	100.0	419	2	US-08-999-811-2	Sequence 2, Appli
7	862	100.0	419	3	US-09-042-105-2	Sequence 2, Appli
8	862	100.0	419	3	US-09-042-105-18	Sequence 18, Appl
9	862	100.0	419	4	US-08-795-430-8	Sequence 8, Appli
10	862	100.0	419	4	US-08-510-133A-35	Sequence 35, Appl
11	862	100.0	419	5	PCT-US96-09001-2	Sequence 2, Appli
12	858	99.5	419	4	US-08-795-430-11	Sequence 11, Appl
13	845	98.3	418	4	US-08-795-430-13	Sequence 13, Appl
14	219	59.4	421	4	US-08-915-795-9	Sequence 9, Appli
15	215	59.4	458	4	US-08-915-795-8	Sequence 8, Appli
16	211	58.3	425	4	US-08-915-795-3	Sequence 3, Appli
17	211	58.3	454	4	US-08-915-795-5	Sequence 5, Appli
18	126	44.8	145	3	US-08-284-551C-2	Sequence 2, Appli
19	126	44.8	214	6	5240848-11	Patent No. 5240848
20	126	44.8	215	3	US-08-807-992B-3	Sequence 3, Appli
21	126	44.8	215	4	US-08-586-039B-49	Sequence 49, Appl
22	126	44.8	215	6	5219739-22	Patent No. 5219739
23	126	44.8	215	6	5240848-7	Patent No. 5240848
24	126	44.8	231	5	PCT-US96-09001-10	Sequence 10, Appl
25	126	44.8	232	2	US-08-999-811-7	Sequence 7, Appli
26	126	44.8	232	2	US-08-824-996-9	Sequence 9, Appli
27	126	44.8	232	3	US-08-807-992B-4	Sequence 4, Appli
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29	124	44.0	121	6	5194596-19	Patent No. 5194596
30	124	44.0	121	6	5219739-20	Patent No. 5219739
31	124	44.0	147	3	US-08-807-992B-1	Sequence 1, Appli
32	124	44.0	165	6	5194596-18	Patent No. 5194596
33	124	44.0	165	6	5219739-19	Patent No. 5219739
34	124	44.0	191	3	US-08-567-200A-2	Sequence 2, Appli
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37	124	44.0	191	4	US-08-795-430-56	Sequence 56, Appl
38	124	44.0	191	6	5382621-4	Patent No. 5382621
39	118	32.6	109	3	US-08-691-794-3	Sequence 3, Appli
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41	109	30.1	120	6	5219739-9	Patent No. 5219739
42	109	30.1	164	6	5194596-17	Patent No. 5194596
43	109	30.1	164	6	5219739-17	Patent No. 5219739
44	109	30.1	164	6	5219739-18	Patent No. 5219739
45	109	30.1	189	1	US-08-459-427A-15	Sequence 15, Appl

ALIGNMENTS

RESULT 1
US-08-999-811-4
; Sequence 4, Application US/08999811
; Patent No. 5932540
; GENERAL INFORMATION:
; APPLICANT: HO, JING-SHAN
; APPLICANT: ROSEN, CRAIG A.
; APPLICANT: PA , TIANG
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR 2
; NUMBER OF SEQUENCES: 15
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SPENCE, FISCHER, SULLIVAN & FOX
; STREET: 1700 NEW YORK AVENUE
; CITY: WASHINGTON
; STATE: DC
; COUNTRY: USA
; ZIP: 20005
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: Patentin Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/999,811
; FILING DATE: HEREWITH
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/207,550
; FILING DATE: 8-MAR-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/465,968
; FILING DATE: 06 JUN 1995
; ATTORNEY/AGENT INFORMATION:
; NAME: MARKOWITZ, KAREN R.
; REGISTRATION NUMBER: 36,351
; REFERENCE/DOCKET NUMBER: 1498.1000004
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202)371-2600
; TELEFAX: (202)371-2540
; INFORMATION FOR SEQ ID NO: 4:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 350 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-999-811-4

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Best Local Similarity 100.0%; Prob. No. 4.6e-88;

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; Sequence 2, Application US/08824996
; Patent No. 5665620
; GENERAL INFORMATION:
;  APPLICANT: Bu, Ling Shan
;  APPLICANT: Rosen, Craig A.
;  APPLICANT: Cao, Liang
;  TITLE OF INVENTION: Polynucleotides Encoding Vascular Endothelial Growth
;  TITLE OF INVENTION: Factor 2
;  FILE REFERENCE: PF1201
;  CURRENT APPLICATION NUMBER: US/08/824,996
;  CURRENT FILING DATE: 1997-03-27
;  EARLIER APPLICATION NUMBER: 08/207,550
;  EARLIER FILING DATE: 1994-03-08
;  NUMBER OF SEQ ID NOS: 9
;  SOFTWARE: Patentin Ver. 2.0
; SEQ ID NO 2
;   LENGTH: 350
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US/08/824,996/2


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Qy       1 PQGGQCNSEGLQCMNISISYELSKILFEFTVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
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Db      92 PQGGQCNSEGLQCMNISISYELSKILFEFTVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 151

Qy      61 VHSIIRR 67
           |||||||
Db     152 VHSIIRR 158


RESULT   3
US/09/042,105/4
; Sequence 4, Application US/09042105
; Patent No. 6046177
;  GENERAL INFORMATION:
;     APPLICANT:  HU, LING SHAN
;     APPLICANT:  ROSEN, CRAIG A.
;     APPLICANT:  CAO, LIANG
;     TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;     NUMBER OF SEQUENCES:  5
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;       STREET:  1100 NEW YORK AVENUE
;       CITY:  WASHINGTON
;       STATE:  DC
;       COUNTRY:  USA
;       ZIP:  20005
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC Compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  Patentin Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/09/042,105
;       FILING DATE:  HEREWITH
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/207,550
;       FILING DATE:  8-MAR-1994
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/465,968
;       FILING DATE:  06-JUN-1995
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  TO BE ASSIGNED
;       FILING DATE:  24-DEC-1997
;       CLASSIFICATION:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  ERIC K. STEFFE
;       REGISTRATION NUMBER:  36,688
;       REFERENCE/DOCKET NUMBER:  1499.1000004/EKS
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (202)371-2600
;       TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  4:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  350 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US/09/042,105/4


  Query Match             100.0%;  Score 362;  DB 3;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PQGGQCNSEGLQCMNISISYELSKILFEFTVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 PQGGQCNSEGLQCMNISISYELSKILFEFTVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 151

Qy      61 VHSIIRR 67
           |||||||
Db     152 VHSIIRR 158


RESULT   4
US/08/510,133A/33
; Sequence 33, Application US/08510133A
; Patent No. 6238859
;  GENERAL INFORMATION:
;       APPLICANT: Alitalo, Kari
;                  Jeltsov, Vladimir
;       TITLE OF INVENTION: Receptor Ligand
;       NUMBER OF SEQUENCES: 35
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;            STREET: 6300 Sears Tower, 233 South Wacker Drive
;            CITY: Chicago
;            STATE: Illinois
;            COUNTRY: United States of America
;            ZIP: 60606-6402
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC Compatible
;            OPERATING SYSTEM: PC DOS/MS DOS
;            SOFTWARE: Patentin Release #1.0, Version #1.25
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/08/510,133A
;            FILING DATE: 01-Aug-1995
;            CLASSIFICATION: Unknown
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Cass, David A.
;            REGISTRATION NUMBER: 38,154
;            REFERENCE/DOCKET NUMBER: 2811/32863
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 312/474-6300
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;              TELEFAX: 312/474-0448
;              TELEX: 25-3856
;   INFORMATION FOR SEQ ID NO: 33:
;        SEQUENCE CHARACTERISTICS:
;              LENGTH: 350 amino acids
;              TYPE: amino acid
;              TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 33:
US-08-534-376A-33


  Query Match             100.0%;  Score 362;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     292 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 351

Qy      61 VHSIIRR 67
           |||||||
Db     152 VHSIIRR 158


RESULT   5
US-08-585-805-33
; Sequence 33, Application US/08585805
; Patent No. 5615530
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Jeltsov, Vladimir
;    TITLE OF INVENTION:  Receptor Ligand
;    NUMBER OF SEQUENCES:  35
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/585,805
;      FILING DATE:
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  2611/33072
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-3856
;  INFORMATION FOR SEQ ID NO:  33:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  350 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-585-805-33


  Query Match             100.0%;  Score 362;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 4.6e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     292 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 351

Qy      61 VHSIIRR 67
           |||||||
Db     152 VHSIIRR 158


RESULT   6
US-08-999-811-2
; Sequence 2, Application US/08999811
; Patent No. 5932549
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING-SHAN
;    APPLICANT:  ROSEN, CRAIG A.
;    APPLICANT:  CAO, YIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  [illegible]
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/999,811
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8-MAR-1994
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06-JUN-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  MARKOWICZ, KAREN K.
;      REGISTRATION NUMBER:  36,451
;      REFERENCE/DOCKET NUMBER:  1488.1000004
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202)371-2600
;      TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-999-811-2


  Query Match             100.0%;  Score 362;  DB 2;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 5.7e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 60
              |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCGGCCNSEGLQCMNISSYLSKLLPEFIVPLSQCPEPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT   7
US-09-042-105-2
; Sequence 2, Application US/09042105
; Patent No. 6040157
;  GENERAL INFORMATION:
```

```
;     APPLICANT:  HU, JING SHAN
;     APPLICANT:  ROSEN, CRAIG A.
;     APPLICANT:  CAO, LIANG
;     TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;     NUMBER OF SEQUENCES:  45
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;       STREET:  1100 NEW YORK AVENUE
;       CITY:  WASHINGTON
;       STATE:  DC
;       COUNTRY:  USA
;       ZIP:  20005
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS DOS
;       SOFTWARE:  Patentin Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/09/042,105
;       FILING DATE:  HEREWITH
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/207,550
;       FILING DATE:  8 MAR 1994
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/465,968
;       FILING DATE:  06 JUN 1995
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  TO BE ASSIGNED
;       FILING DATE:  24 DEC 1997
;       CLASSIFICATION:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  ERIC K. STEFFE
;       REGISTRATION NUMBER:  36,688
;       REFERENCE/DOCKET NUMBER:  1400.1000004/EKS
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (202)371-2600
;       TELEFAX:  (202)371-2540
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US 09/042,105 2

  Query Match             100.0%;  Score 362;  DB 3;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 5.7e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCSGSCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCSGSCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT  8
US 09/042,105 IS
; Sequence 18, Application US/09042105
; Patent No. 6040157
;  GENERAL INFORMATION:
;     APPLICANT:  HU, JING SHAN
;     APPLICANT:  ROSEN, CRAIG A.
;     APPLICANT:  CAO, LIANG
;     TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;     NUMBER OF SEQUENCES:  45
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;       STREET:  1100 NEW YORK AVENUE
;       CITY:  WASHINGTON
;       STATE:  DC
;       COUNTRY:  USA
;       ZIP:  20005
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS DOS
;       SOFTWARE:  Patentin Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/09/042,105
;       FILING DATE:  HEREWITH
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/207,550
;       FILING DATE:  8 MAR 1994
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/465,968
;       FILING DATE:  06 JUN 1995
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  TO BE ASSIGNED
;       FILING DATE:  24-DEC-1997
;       CLASSIFICATION:
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  ERIC K. STEFFE
;       REGISTRATION NUMBER:  36,688
;       REFERENCE/DOCKET NUMBER:  1400.1000004/EKS
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (202)371-2600
;       TELEFAX:  (202)371-2540
;   INFORMATION FOR SEQ ID NO:  18:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US 09/042,105 18


  Query Match             100.0%;  Score 362;  DB 3;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 5.7e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCSGSCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
            ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCSGSCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT  9
US 08/795,430 8
; Sequence 8, Application US/08795430
; Patent No. 6143721
;  GENERAL INFORMATION:
;     APPLICANT:  Aiello, Lori
;     APPLICANT:  Jakeman, Vladimir
;     TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;     TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;     NUMBER OF SEQUENCES:  57
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;       STREET:  6300 Sears Tower, 233 South Wacker Drive
;       CITY:  Chicago
;       STATE:  Illinois
;       COUNTRY:  United States of America
```

```
;         ZIP: 60606-6402
;       COMPUTER READABLE FORM:
;         MEDIUM TYPE: Floppy disk
;         COMPUTER: IBM PC compatible
;         OPERATING SYSTEM: PC-DOS/MS-DOS
;         SOFTWARE: PatentIn Release #1.0, Version #1.30
;       CURRENT APPLICATION DATA:
;         APPLICATION NUMBER: [illegible]
;         FILING DATE:
;         CLASSIFICATION: 435
;       PRIOR APPLICATION DATA:
;         APPLICATION NUMBER: PCT/FI96/00427
;         FILING DATE: 01-AUG-1996
;       PRIOR APPLICATION DATA
;         APPLICATION NUMBER: 08/671,573
;         FILING DATE: 28-JUN-1996
;       PRIOR APPLICATION DATA:
;         APPLICATION NUMBER: 08/601,132
;         FILING DATE: 14-FEB-1996
;       PRIOR APPLICATION DATA:
;         APPLICATION NUMBER: 08/585,895
;         FILING DATE: 12-JAN 1996
;       PRIOR APPLICATION DATA:
;         APPLICATION NUMBER: 08/510,133
;         FILING DATE: 01-AUG-1995
;       PRIOR APPLICATION DATA:
;         APPLICATION NUMBER: 08/340,011
;         FILING DATE: 14-NOV-1994
;       ATTORNEY/AGENT INFORMATION:
;         NAME: Gass, David A.
;         REGISTRATION NUMBER: 38,153
;         REFERENCE/DOCKET NUMBER: 28967/33691
;       TELECOMMUNICATION INFORMATION:
;         TELEPHONE: 312/474-6300
;         TELEFAX: 312/474-0448
;         TELEX: 25-3856
;   INFORMATION FOR SEQ ID NO: 8:
;       SEQUENCE CHARACTERISTICS:
;         LENGTH: 419 amino acids
;         TYPE: amino acid
;         TOPOLOGY: linear
;       MOLECULE TYPE: protein
US-08-795-430-8

  Query Match              100.0%;  Score 362;  DB 4;  Length 419;
  Best Local Similarity    100.0%;  Pred. No. 5.7e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         1 KCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       161 KCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy        61 VHSIIRR 67
             |||||||
Db       221 VHSIIRR 227

RESULT 10
US-08-510-133A-35
; Sequence 35, Application US/08510133A
; Patent No. 6221839
;   GENERAL INFORMATION:
;         APPLICANT: Alitalo, Kari
;                    Joukov, Vladimir
;         TITLE OF INVENTION: Receptor Ligand
;         NUMBER OF SEQUENCES: 35
;         CORRESPONDENCE ADDRESS:
;              ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;              STREET: 6300 Sears Tower, 233 South Wacker Drive
;              CITY: Chicago
;              STATE: Illinois
;              COUNTRY: United States of America
;              ZIP: 60606-6402
;         COMPUTER READABLE FORM:
;              MEDIUM TYPE: Floppy disk
;              COMPUTER: IBM PC compatible
;              OPERATING SYSTEM: PC-DOS/MS-DOS
;              SOFTWARE: PatentIn Release #1.0, Version #1.25
;         CURRENT APPLICATION DATA:
;              APPLICATION NUMBER: US/08/510,133A
;              FILING DATE: 01-Aug-1995
;              CLASSIFICATION: <Unknown>
;         ATTORNEY/AGENT INFORMATION:
;              NAME: Gass, David A.
;              REGISTRATION NUMBER: 38,153
;              REFERENCE/DOCKET NUMBER: 28113/32863
;         TELECOMMUNICATION INFORMATION:
;              TELEPHONE: 312/474-6300
;              TELEFAX: 312/474-0448
;              TELEX: 25-3856
;    INFORMATION FOR SEQ ID NO: 35:
;         SEQUENCE CHARACTERISTICS:
;              LENGTH: 419 amino acids
;              TYPE: amino acid
;              TOPOLOGY: linear
;         MOLECULE TYPE: protein
;         SEQUENCE DESCRIPTION: SEQ ID NO: 35:
US-08-510-133A-35

  Query Match              100.0%;  Score 362;  DB 4;  Length 419;
  Best Local Similarity    100.0%;  Pred. No. 5.7e-38;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy         1 KCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
             ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       161 KCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy        61 VHSIIRR 67
             |||||||
Db       221 VHSIIRR 227

RESULT 11
PCT-US96-09001-2
; Sequence 2, Application PC/TUS9609001
;  GENERAL INFORMATION:
;    APPLICANT: HU, ET AL.
;    TITLE OF INVENTION: Human Vascular EndothelialGrowth Factor 2
;    NUMBER OF SEQUENCES: 10
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE: CAFELLA, BYRNE, BAIN, GILFILLAN,
;      ADDRESSEE: CECCHI, STEWART & OLSTEIN
;      STREET: 6 BECKER FARM ROAD
;      CITY: ROSELAND
;      STATE: NEW JERSEY
;      COUNTRY: USA
;      ZIP: 07068
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE: 3.5 INCH DISKETTE
;      COMPUTER: IBM PS/2
;      OPERATING SYSTEM: MS-DOS
;      SOFTWARE: WORD PERFECT 5.1
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER: PCT/US96/09001
;      FILING DATE:
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER: 08/465,968
;      FILING DATE: 6 JUN 95
;      APPLICATION NUMBER: 08/207,550
;      FILING DATE: 8 MAR 1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME: FERRARO, GREGORY D.
;      REGISTRATION NUMBER: 36,134
```

```
;       REFERENCE/Testkit Number:  ATCC 209
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  301 984 1700
;       TELEFAX:  301 984 1744
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 AMINO ACIDS
;       TYPE:  AMINO ACID
;       STRANDEDNESS:
;       TOPOLOGY:  LINEAR
;     MOLECULE TYPE:  PROTEIN
PCT 0206 09001 2


  Query Match             100.0%;  Score 662;  DB 5;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 5.7e-48;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGGCCNSEGILQCMNISISYELSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCGGGCCNSEGILQCMNISISYELSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT  12
US-08-795-430-11
; Sequence 11, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;    TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;    NUMBER OF SEQUENCES:  57
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,430
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/EP96/00427
;      FILING DATE:  01-AUG-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/671,573
;      FILING DATE:  28-JUN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/601,132
;      FILING DATE:  14-FEB-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/585,895
;      FILING DATE:  12-JAN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/510,133
;      FILING DATE:  01-AUG-1995
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/340,011
;      FILING DATE:  14-NOV-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  2956/33691
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-0856
;  INFORMATION FOR SEQ ID NO:  11:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  415 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-430-11


  Query Match             98.9%;  Score 658;  DB 4;  Length 415;
  Best Local Similarity   98.5%;  Pred. No. 1.8e-47;
  Matches   66;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 RCGGGCCNSEGILQCMNISISYELSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||||
Db     157 RCGGGCCNSEGILQCMNISISYELSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 216

Qy      61 VHSIIRR 67
           |||||||
Db     217 VHSIIRR 223


RESULT  13
US-08-795-430-13
; Sequence 13, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;    TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;    NUMBER OF SEQUENCES:  57
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,430
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/EP96/00427
;      FILING DATE:  01-AUG-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/671,573
;      FILING DATE:  28-JUN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/601,132
;      FILING DATE:  14-FEB-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/585,895
;      FILING DATE:  12-JAN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/510,133
;      FILING DATE:  01-AUG-1995
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/340,011
;      FILING DATE:  14-NOV-1994
;    ATTORNEY/AGENT INFORMATION:
```

```
;       NAME:  Gass, David A.
;       REGISTRATION NUMBER:  38,153
;       REFERENCE/DOCKET NUMBER:  28907/33691
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  412/474-6300
;       TELEFAX:  412/471-0448
;       TELEX:  25-3856
;   INFORMATION FOR SEQ ID NO:  13
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  418 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  linear
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-915-795-13


  Query Match             95.3%;  Score 445;  DB 4;  Length 418;
  Best Local Similarity   92.5%;  Prod. No. 8.1e-46;
  Matches  222;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 RCGGGCNSEDLQCMNISISYLSKILEEIVPLSQGEKPVTISFANHISCRCMSKLDVYRQ 60
           ||||||||||||||| ||||:|||||||||||||| |||||:|||||||||||||||||||
Db     204 RCGGGCNSEDLQCMNISINYISKILEEIVPLSHGEKPVTVSFANHISCRCMSKLDVYRQ 263

Qy      61 VHSIIRR 67
           |||||||
Db     264 VHSIIRR 270


RESULT  14
US-08-915-795-9
; Sequence 9, Application US/08915795
; Patent No. 6235713
;  GENERAL INFORMATION:
;    APPLICANT:  Marc G. ACHEN
;    APPLICANT:  Andrew F. WILKS
;    APPLICANT:  Steven A. STACKER
;    APPLICANT:  Kari ALITALO
;    TITLE OF INVENTION:  GROWTH FACTOR
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;      STREET:  1200 G Street, NW, Suite 700
;      CITY:  Washington
;      STATE:  DC
;      COUNTRY:  United States of America
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/915,795
;      FILING DATE:
;      CLASSIFICATION:  536
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  EVANS, Joseph D.
;      REGISTRATION NUMBER:  26,269
;      REFERENCE/DOCKET NUMBER:  1064/42983
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 628-8800
;      TELEFAX:  (202) 628-8844
;      TELEX:  N/A
;  INFORMATION FOR SEQ ID NO:  9:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  821 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    ORIGINAL SOURCE:
;      TISSUE TYPE:  Mouse Lung
US-08-915-795-9


  Query Match             59.4%;  Score 215;  DB 4;  Length 821;
  Best Local Similarity   59.7%;  Prod. No. 1.7e-19;
  Matches   40;  Conservative    9;  Mismatches   16;  Indels    2;  Gaps    1;

Qy       1 RCGGGCNSEDLQCMNISISYLSKILEEIVPLSQGEKPVTISFANHISCRCMSKLDVYRQ 60
           ||||||| ||: |||||||||:|| |||:|||:  |: | :  |||| |:|:      |
Db     141 RCGGGCNEEGVMCMNISISYISQLEEISVPLISVPELVPVKIANHTGCKCLPTGP--RH 198

Qy      61 VHSIIRR 67
           :|||||
Db     199 PYSIIRR 205


RESULT  15
US-08-915-795-8
; Sequence 8, Application US/08915795
; Patent No. 6235713
;  GENERAL INFORMATION:
;    APPLICANT:  Marc G. ACHEN
;    APPLICANT:  Andrew F. WILKS
;    APPLICANT:  Steven A. STACKER
;    APPLICANT:  Kari ALITALO
;    TITLE OF INVENTION:  GROWTH FACTOR
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;      STREET:  1200 G Street, NW, Suite 700
;      CITY:  Washington
;      STATE:  DC
;      COUNTRY:  United States of America
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/915,795
;      FILING DATE:
;      CLASSIFICATION:  536
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  EVANS, Joseph D.
;      REGISTRATION NUMBER:  26,269
;      REFERENCE/DOCKET NUMBER:  1064/42983
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 628-8800
;      TELEFAX:  (202) 628-8844
;      TELEX:  N/A
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  356 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    ORIGINAL SOURCE:
;      TISSUE TYPE:  Mouse Lung
US-08-915-795-8


  Query Match             59.4%;  Score 215;  DB 4;  Length 458;
  Best Local Similarity   59.7%;  Prod. No. 1.9e-19;
  Matches   40;  Conservative    9;  Mismatches   16;  Indels    2;  Gaps    1;

Qy       1 RCGGGCNSEDLQCMNISISYLSKILEEIVPLSQGEKPVTISFANHISCRCMSKLDVYRQ 60
           ||||||| ||: |||||||||:|| |||:|||:  |: | :  |||| |:|:      |
Db     146 RCGGGCNEEGVMCMNISISYISQLEEISVPLISVPELVPVKIANHTGCKCLPTGP--RH 203

Qy      61 VHSIIRR 67
           :|||||
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OM 264 PYSEIDM 210

Search completed: December 26, 2001, 11:29:32
Job Time : 1606 sec

GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:41:02 ; Search time 76.78 Seconds
(without alignments)
66.472 Million cell updates/sec

Title: US-09-534-376A-8_COPY_161_227
Perfect score: 362
Sequence: 1 RCGGCCNSEGLACMNTSTSY.....SCRCMSKLDVYRQVHSIIRR 67

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 219241 seqs, 76174552 residues

Total number of hits satisfying chosen parameters: 219241

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	362	100.0	419	2	S69207	vascular endothelI
2	126	34.8	232	2	A41551	vascular endotheli
3	119	32.9	190	2	S52130	vascular endotheli
4	109	30.1	120	2	A33787	vascular endotheli
5	109	30.1	146	2	S57956	ovine vascular end
6	109	30.1	190	2	B40080	vascular endotheli
7	107	29.6	190	2	B44881	vascular endotheli
8	107	29.6	214	2	A44881	vascular endotheli
9	106	29.3	190	2	A35987	glioma derived vas
10	97.5	26.9	188	2	JC4680	vascular endotheli
11	97.5	26.9	207	2	JC4679	vascular endotheli
12	96	26.5	128	2	I51295	vascular endotheli
13	95	26.2	133	2	B49530	vascular endotheli
14	94	26.0	149	2	A41236	placental growth f
15	88.5	24.4	158	2	A56125	placental growth f
16	85.5	23.6	226	1	IVMVSS	PDGF-related trans
17	85.5	23.6	241	1	PFBH02	platelet-derived g
18	84.5	23.3	245	1	IVCTSS	platelet-derived g
19	84	23.2	148	2	B49530	16K vascular endot
20	81.5	22.5	225	2	S25997	platelet derived g
21	81.5	22.5	241	1	PFMS2R	platelet-derived g
22	76.5	20.9	271	2	A25669	PDGF-related trans
23	73	20.2	200	2	I51551	platelet-derived g
24	69.5	19.2	166	2	JN0248	platelet-derived g
25	69.5	19.2	196	2	A47359	platelet derived g
26	69.5	19.2	196	2	B28964	platelet-derived g
27	69.5	19.2	196	2	A48851	platelet-derived g
28	69.5	19.2	197	2	S25096	platelet-derived g
29	69.5	19.2	198	2	JN0235	platelet derived g
30	69.5	19.2	211	1	PFBUG1	platelet derived g
31	69	19.1	215	2	S08220	platelet-derived g
32	69	19.1	225	2	I27211	hypothetical proto
33	69	19.1	226	2	I51550	platelet-derived g
34	68.5	18.1	249	2	I21785	hypothetical prote
35	64	17.7	560	2	A40044	PML-1 protein - hu
36	64	17.7	589	2	S44381	PML protein, splic
37	64	17.7	589	2	S42517	PML protein, splic
38	64	17.7	589	2	A60198	Myl protein - huma
39	64	17.7	593	2	B40045	probable transcrip
40	64	17.7	633	2	S19244	gene Myl protein -
41	64	17.7	641	2	A40045	probable transcrip
42	64	17.7	802	2	S42518	PML protein, splic
43	64	17.7	802	2	S44382	PML protein, splic
44	64	17.7	860	2	S42516	PML protein, splic
45	64	17.7	860	2	S44380	PML protein, splic

ALIGNMENTS

RESULT 1
S69207
vascular endothelial growth factor C precursor - human
N;Alternate names: FLT4 ligand DHM
C;Species: Homo sapiens (man)
C;Date: 27-Apr-1998 #sequence_revision 01-Nov-1996 #text_change 08-Oct-1999
C;Accession: S69207; S61795; S71443; S69208; G02659
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksel
EMBO J. 15, 1751, 1996
A;Title: Corrigendum: A novel vascular endothelial growth factor, VEGF-C, is a ligand
A;Reference number: S69207; MUID:96204094
A;Accession: S69207
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-419 <JOU>
A;Cross-references: EMBL:X94216; NID:g1177488; PIDN:CAA63907.1; PID:e221096; PID:g118
A;Note: the nucleotide sequence was submitted to the EMBL Data Library, December 1995
A;Note: only a part of the translation is shown
A;Note: this is a revision to the sequence from reference S61795
R;Joukov, V.; Pajusola, K.; Kaipainen, A.; Chilov, D.; Lahtinen, I.; Kukk, E.; Saksel
EMBO J. 15, 290-298, 1996
A;Title: A novel vascular endothelial growth factor, VEGF-C, is a ligand for the Flt4
A;Reference number: S61795; MUID:96178224
A;Accession: S61795
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 70-419 <JOU1>
A;Note: this sequence has been revised in reference S69207
A;Accession: S71443
A;Molecule type: protein
A;Residues: 'X',104-120 <JOU2>
R;Lee, J.; Gray, A.; Yuan, J.; Luoh, S.M.; Avraham, H.; Wood, W.I.
submitted to the EMBL Data Library, December 1995
A;Description: Vascular endothelial growth factor related protein (VRP): A ligand and
A;Reference number: S69208
A;Accession: S69208
A;Molecule type: mRNA
A;Residues: 1-419 <LEE>
A;Cross-references: EMBL:U43142; NID:g1150988; PIDN:AAA85214.1; PID:g1150989
R;Morris, J.C.
submitted to the EMBL Data Library, May 1996
A;Reference number: H01557
A;Accession: G02659
A;Status: preliminary; translated to # 3/PMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-419 <MOR>
A;Cross-references: EMBL:U58111; NID:g1273426; PIDN:AAB02909.1; PID:g1273427
C;Genetics:
A;Gene: GDB:VEGFC; VRP
A;Cross-references: GDB:4890883; OMIM:601528
F;1-12/Domain: signal sequence #status predicted <SIG>
F;13-102/Domain: propeptide #status predicted <PRO>

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F;103 419/Product: vascular endothelial growth factor C #status experimental ·MAT·


  Query Match             100.0%;  Score 462;  DB 2;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 3.1e-34;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT   2
A41551
vascular endothelial growth factor 206 precursor - human
N;Alternate names: vascular permeability factor
N;Contains: vascular endothelial growth factor 121 (VEGF 121); VEGF 165; VEGF 189; VEGF
C;Species: Homo sapiens (man)
C;Date: 28-Aug-1992 #sequence_revision 28-Aug-1992 #text_change 05-Nov-1999
C;Accession: A41551; C41551; B41551; A40454; B40454; C40454; A40079; A40080; JQ1463; JQ1
R;Houck, K.A.; Ferrara, N.; Winer, J.; Cachianes, G.; Li, B.; Leung, D.W.
Mol. Endocrinol. 5, 1806-1814, 1991
A;Title: The vascular endothelial growth factor family: identification of a fourth molec
A;Reference number: A41551; MUID:92168017
A;Accession: A41551
A;Molecule type: mRNA
A;Residues: 1-232 ·HOU·
A;Cross-references: GB:S85192; NID:q236155; PID:q236156
A;Accession: C41551
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 ·HOU2·
A;Accession: B41551
A;Status: nucleic acid sequence not shown; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-141,227-232 ·HOU·
R;Tischer, E.; Mitchell, R.; Hartman, T.; Silva, M.; Gospodarowicz, D.; Fiddes, J.C.; Ab
J. Biol. Chem. 266, 11947-11954, 1991
A;Title: The human gene for vascular endothelial growth factor. Multiple protein forms a
A;Reference number: A40454; MUID:91268072
A;Accession: A40454
A;Molecule type: DNA
A;Residues: 1-165,183-232 ·TIT·
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63976; GB
A;Accession: B40454
A;Molecule type: DNA
A;Residues: 1-140,'N',183-232 ·TIT·
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63977; GB
A;Accession: C40454
A;Molecule type: DNA
A;Residues: 1-141,227-232 ·TIT·
A;Cross-references: GB:M63971; GB:M63972; GB:M63973; GB:M63974; GB:M63975; GB:M63978
R;Keck, P.J.; Hauser, S.D.; Krivi, G.; Sanzo, K.; Warren, T.; Feder, J.; Connolly, D.T.
Science 246, 1309-1312, 1989
A;Title: Vascular permeability factor, an endothelial cell mitogen related to PDGF.
A;Reference number: A40079; MUID:90069609
A;Accession: A40079
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-165,183-232 ·KEC·
A;Cross-references: GB:M27281; NID:q340300; PIDN:AAA36807.1; PID:q340301
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A;Reference number: A40080; MUID:90069608
A;Accession: A40080
A;Status: not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 ·LEU·
A;Cross-references: GB:M32977; NID:q181970; PIDN:AAA35789.1; PID:q181971
R;Weindel, K.; Marme, D.; Weich, H.A.
Biochem. Biophys. Res. Commun. 184, 1167-1174, 1992
A;Title: AIDS-associated Kaposi's sarcoma cells in culture express vascular endotheli
A;Reference number: JQ1463; MUID:92231879
A;Accession: JQ1463
A;Molecule type: mRNA
A;Residues: 1-140,'N',183-232 ·WEI·
A;Cross-references: EMBL:X62568; NID:q37658; PIDN:CAA44447.1; PID:q37659
A;Experimental source: AIDS Kaposi's sarcoma cell
A;Accession: JQ1464
A;Molecule type: mRNA
A;Residues: 1-140,'N',227-232 ·WEI·
A;Experimental source: AIDS-Kaposi's sarcoma cell
R;Connolly, D.T.; Olander, J.V.; Heuvelman, D.; Nelson, R.; Monsell, R.; Siegel, N.;
J. Biol. Chem. 264, 20017-20024, 1989
A;Title: Human vascular permeability factor. Isolation from U937 cells.
A;Reference number: A34492; MUID:90062112
A;Accession: A34492
A;Molecule type: protein
A;Residues: 27-46;44-49,'R';72-76,'Q',78-81;59-71 ·CON·
C;Comment: The most common of several alternatively spliced forms is VEGF 165.
C;Genetics:
A;Gene: GDB:VEGF
A;Cross-references: GDB:132244; OMIM:192240
A;Map position: 6p21-6p12
C;Function:
A;Description: promotes fluid and protein leakage from blood vessels
C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; extracellular
F;1-232/Product: vascular endothelial growth factor 206 precursor #status predicted ·
F;1-165,183-232/Product: vascular endothelial growth factor 189 precursor #status pre
F;1-141,227-232/Product: vascular endothelial growth factor 121 precursor #status pre
F;1-26/Domain: signal sequence #status predicted ·SIG·
F;101/Binding site: carbohydrate (Asn) (covalent) #status predicted


  Query Match             34.8%;  Score 126;  DB 2;  Length 232;
  Best Local Similarity   39.4%;  Pred. No. 3.2e-07;
  Matches   26;  Conservative    7;  Mismatches   31;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  : |     ||      :|| |  | |  | |  ||
Db      82 RCGGCCNDEGLECVPTEESNITMQIMRIKP-HQGQHIGEMSFLQHNKCECRPKKDRARQ 139

Qy      61 VHSIIR 66
             :|
Db     140 EKKSVR 145


RESULT   3
S52130
vascular endothelial growth factor - pig
C;Species: Sus scrota domestica (domestic pig)
C;Date: 14-Jul-1995 #sequence_revision 21-Jul-1995 #text_change 05-Nov-1999
C;Accession: S52130
R;Sharma, H.S.; Tang, Z.H.; Gho, B.C.G.; Verdouw, P.D.
Biochim. Biophys. Acta 1260, 235-238, 1995
A;Title: Nucleotide sequence and expression of the porcine vascular endothelial growt
A;Reference number: S52130; MUID:95143284
A;Accession: S52130
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-190 ·SHA·
A;Cross-references: GB:X81480; NID:q587559; PIDN:CAA57143.1; PID:q587560


  Query Match             32.9%;  Score 119;  DB 2;  Length 190;
  Best Local Similarity   40.0%;  Pred. No. 1.7e-06;
  Matches   26;  Conservative    9;  Mismatches   22;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL----SQGPKPVTISFANHTSCRCMSKL 56
           |||||||  |||:|: |          | ||: :      ||      :|| |  | |  |
Db      81 RCGGCCNDEGLECVPTEE----ENITMQIMRIKPHQGQHIGEMSFLQHNKCECRPKK 133
```

```
Qy      56 DVYRQ 60
           | ||
Db     134 DRARQ 138


RESULT   4
A33787
vascular endothelial growth factor (version 1) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 16-Mar-1990 #sequence_revision 16-Mar-1990 #text_change 05-Nov-1999
C;Accession: A33787
R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Crisp
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet-derived growth
A;Reference number: A33787; MUID:90121225
A;Accession: A33787
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-120 <TIS>
A;Cross-references: GB:M32977; NID:g163810; PIDN:AAA30805.1; PID:g163811
C;Keywords: alternative splicing

  Query Match             30.1%;  Score 109;  DB 2;  Length 120;
  Best Local Similarity   38.7%;  Pred. No. 1.5e-05;
  Matches   24;  Conservative    6;  Mismatches   26;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTISFANHTSCRCMSKLDVY 58
           |||||| | |:|: |    ::  :  |    || |     :|| |  | |  | |
Db      55 RCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMSFLQHNKCECRPKKDKA 110

Qy      59 RQ 60
           ||
Db     111 RQ 112


RESULT   5
S57956
ovine vascular endothelial growth factor - sheep
C;Species: ovis orientalis aries, ovis ammon aries (domestic sheep)
C;Date: 13-Jan-1996 #sequence_revision 01-Mar-1996 #text_change 05-Nov-1999
C;Accession: S57956
R;Redmer, D.A.; Dai, Y.; Li, J.; Jones, S.C.; Moor, R.M.
submitted to the EMBL Data Library, July 1995
A;Reference number: S57956
A;Accession: S57956
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-146 <RED>
A;Cross-references: EMBL:X89506; NID:g899450; PIDN:CAA61677.1; PID:g899451

  Query Match             30.1%;  Score 109;  DB 2;  Length 146;
  Best Local Similarity   38.7%;  Pred. No. 1.9e-05;
  Matches   24;  Conservative    6;  Mismatches   26;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTISFANHTSCRCMSKLDVY 58
           |||||| | |:|: |    ::  :  |    || |     :|| |  | |  | |
Db      81 RCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMSFLQHNKCECRPKKDKA 136

Qy      59 RQ 60
           ||
Db     137 RQ 138


RESULT   6
B40080
vascular endothelial growth factor precursor (version 2) - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 05-Nov-1999
C;Accession: B40080; B33787; A33255
R;Leung, D.W.; Cachianes, G.; Kuang, W.J.; Goeddel, D.V.; Ferrara, N.
Science 246, 1306-1309, 1989
A;Title: Vascular endothelial growth factor is a secreted angiogenic mitogen.
A;Reference number: A40080; MUID:90069608
A;Accession: B40080
A;Molecule type: mRNA
A;Residues: 1-190 <LEU>
A;Cross-references: GB:M32976; NID:g163006; PIDN:AAA30502.1; PID:g163007
R;Tischer, E.; Gospodarowicz, D.; Mitchell, R.; Silva, M.; Schilling, J.; Lau, K.; Cr
Biochem. Biophys. Res. Commun. 165, 1198-1206, 1989
A;Title: Vascular endothelial growth factor: a new member of the platelet-derived gro
A;Reference number: A33787; MUID:90121225
A;Accession: B33787
A;Molecule type: mRNA
A;Residues: 27-190 <TIS>
A;Cross-references: GB:M31836; NID:g163808; PIDN:AAA30804.1; PID:g163809
R;Ferrara, N.; Henzel, W.J.
Biochem. Biophys. Res. Commun. 161, 851-858, 1989
A;Title: Pituitary follicular cells secrete a novel heparin binding growth factor spe
A;Reference number: A33255; MUID:89286596
A;Accession: A33255
A;Molecule type: protein
A;Residues: 27-31 <FER>
C;Keywords: alternative splicing; glycoprotein
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-190/Product: vascular endothelial growth factor #status predicted <MAT
F;100/Binding site: carbohydrate (Asn) (covalent) #status predicted

  Query Match             30.1%;  Score 109;  DB 2;  Length 190;
  Best Local Similarity   38.7%;  Pred. No. 2.4e-05;
  Matches   24;  Conservative    6;  Mismatches   26;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ--GPKPVTISFANHTSCRCMSKLDVY 58
           |||||| | |:|: |    ::  :  |    || |     :|| |  | |  | |
Db      81 RCGGCCNDESLECVPTEEFNITMQIMRIKPHQSQHIG----EMSFLQHNKCECRPKKDKA 136

Qy      59 RQ 60
           ||
Db     137 RQ 138


RESULT   7
B44881
vascular endothelial growth factor-1 precursor - mouse
C;Species: Mus musculus (house mouse)
C;Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 05-Nov-1999
C;Accession: B44881; A43351; A61029
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenes
A;Reference number: A44881; MUID:92274860
A;Accession: B44881
A;Molecule type: mRNA
A;Residues: 1-190 <BRE>
A;Cross-references: GB:S38083; NID:g249858; PIDN:AAB22253.1; PID:g249859
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:107622, NCBIP:107623)
R;Claffey, K.P.; Wilkison, W.O.; Spiegelman, B.M.
J. Biol. Chem. 267, 16317-16322, 1992
A;Title: Vascular endothelial growth factor. Regulation by cell differentiation and a
A;Reference number: A43351; MUID:92355593
A;Accession: A43351
A;Molecule type: mRNA
A;Residues: 1-116,'ER',119-190 <CLA>
A;Cross-references: GB:M95200; NID:g202350; PIDN:AAA40547.1; PID:g202351
A;Note: sequence extracted from NCBI backbone (NCBIN:110665, NCBIP:110675)
R;Rosenthal, R.A.; Meayesi, J.F.; Henzel, W.J.; Ferrara, N.; Folkman, J.
Growth Factors 4, 53-59, 1990
A;Title: Conditioned medium from mouse sarcoma 180 cells contains vascular endothelia
A;Reference number: A61029; MUID:91197543
A;Accession: A61029
A;Molecule type: protein
A;Residues: 27-38 <ROS>
```

C;Keywords: alternative splicing; angiogenesis; dimer; disulfide bond; glycoprotein; mit

Query Match 29.6%; Score 107; DB 2; Length 190;
Best Local Similarity 39.7%; Pred. No. 4.1e-05;
Matches 23; Conservative 7; Mismatches 22; Indels 6; Gaps 2;

Qy 1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTISFANHTSCRCMSKLD 56
|| |||| | |:|: || | :: : | || | :|| |: | | | |
Db 81 RCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG-- EMSFLQHSRCECRPKKD 134

RESULT 8
A44881
vascular endothelial growth factor 3 precursor - mouse
N;Contains: vascular endothelial growth factor-2; vascular permeability factor
C;Species: Mus musculus (house mouse)
C;Date: 04-Feb 1994 #sequence_revision 03-Feb 1994 #text_change 08-Oct-1999
C;Accession: A44881; C44881; A60932; S52146
R;Breier, G.; Albrecht, U.; Sterrer, S.; Risau, W.
Development 114, 521-532, 1992
A;Title: Expression of vascular endothelial growth factor during embryonic angiogenesis
A;Reference number: A44881; MUID:92274860
A;Accession: A44881
A;Molecule type: mRNA
A;Residues: 1-214 <BRE>
A;Cross-references: GB:S37052; NID:g249856; PIDN:AAB22252.1; PID:g249857
A;Experimental source: embryo
A;Note: sequence extracted from NCBI backbone (NCBIN:104677, NCBIP:104678)
A;Accession: C44881
A;Molecule type: mRNA
A;Residues: 1-140,209-214 <BR2>
A;Cross-references: GB:S38100; NID:g249860; PIDN:AAB22254.1; PID:g249861
A;Note: sequence extracted from NCBI backbone (NCBIN:107624, NCBIP:107625)
R;Clauss, M.; Gerlach, M.; Gerlach, H.; Brett, J.; Wang, F.; Familletti, P.C.; Pan, Y.C.
J. Exp. Med. 172, 1535-1545, 1990
A;Title: Vascular permeability factor: a tumor-derived polypeptide that induces endothel
A;Reference number: A60932; MUID:91079755
A;Accession: A60932
A;Molecule type: protein
A;Residues: 27-44 <CLA>
R;Senbhara, T.; Kaul, S.C.; Mitsui, Y.; Wadhwa, R.
Biochim. Biophys. Acta 1224, 465-470, 1994
A;Title: Enhanced expression of multiple forms of VEGF is associated with spontaneous in
A;Reference number: S52146; MUID:95101726
A;Accession: S52146
A;Status: preliminary
A;Molecule type: protein
A;Residues: 27-46 <SUG>
C;Comment: Homodimers could be demonstrated for recombinant VEGF-2 but not VEGF-3.
C;Keywords: alternative splicing; angiogenesis; disulfide bond; glycoprotein; homodimer;
F;1-26/Domain: signal sequence #status predicted <SIG>
F;27-214/Product: vascular endothelial growth factor-3 #status experimental <MAT

Query Match 29.6%; Score 107; DB 2; Length 214;
Best Local Similarity 39.7%; Pred. No. 4.6e-05;
Matches 23; Conservative 7; Mismatches 22; Indels 6; Gaps 2;

Qy 1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ-GPKPVTISFANHTSCRCMSKLD 56
|| |||| | |:|: || | :: : | || | :|| |: | | | |
Db 81 RCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG EMSFLQHSRCECRPKKD 134

RESULT 9
A45987
glioma derived vascular endothelial cell growth factor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 16-Nov-1990 #sequence_revision 16-Nov-1990 #text_change 05-Nov-1999
C;Accession: A45987
R;Conn, G.; Bayne, M.L.; Soderman, D.D.; Kwok, P.W.; Sullivan, K.A.; Palisi, T.M.; Hope,
Proc. Natl. Acad. Sci. U.S.A. 87, 2628-2632, 1990
A;Title: Amino acid and cDNA sequences of a vascular endothelial cell mitogen that is ho

A;Reference number: A45987; MUID:90207249
A;Accession: A45987
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-190 <CON>
A;Cross-references: GB:M42167; NID:g204287; PIDN:AAA41211.1; PID:g204288

Query Match 29.4%; Score 106; DB 2; Length 190;
Best Local Similarity 39.7%; Pred. No. 5.4e-05;
Matches 23; Conservative 7; Mismatches 22; Indels 6; Gaps 2;

Qy 1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQ GPKPVTISFANHTSCRCMSKLD 56
|| |||| | |:|: || | :: : | || | :|| |: | | | |
Db 81 RCAGCCNDEALECVPTSESNVIMQIMRIKPHQSQHIG EMSFLQHSRCECRPKKD 134

RESULT 10
JC4680
vascular endothelial growth factor related factor 167 precursor - mouse
N;Alternate names: VRF 167 protein
C;Species: Mus musculus (house mouse)
C;Date: 10-May-1996 #sequence_revision 19-Jul-1996 #text_change 05-Nov-1999
C;Accession: JC4680
R;Townson, S.; Lagercrantz, J.; Grimmond, S.; Silins, G.; Nordenskjoeld, M.; Weber, G
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A;Title: Characterization of the murine VEGF-related factor gene.
A;Reference number: JC4679; MUID:96183052
A;Accession: JC4680
A;Molecule type: mRNA
A;Residues: 1-188 <TOW>
A;Cross-references: GB:U43837; NID:g1314335; PIDN:AAC52554.1; PID:g1314336
C;Comment: This factor is a mitogen, that is selective for endothelial cells, and bel
ar endothelial growth factors 167 and VEGF 186.
C;Genetics:
A;Gene: vrf
A;Map position: 19
A;Introns: 137/2
F;1-21/Domain: signal sequence #status predicted <SIG>
F;22-188/Product: vascular endothelial growth factor related factor #status predicted

Query Match 26.9%; Score 97.5; DB 2; Length 188;
Best Local Similarity 35.2%; Pred. No. 9.8e-05;
Matches 19; Conservative 8; Mismatches 24; Indels 3; Gaps 1;

Qy 1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSK 54
|||||| :|||:|: | : : | | || : :| | |: | | |
Db 77 RCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQIGE---MSLEEHSQCECKPK 127

RESULT 11
JC4679
vascular endothelial growth factor-related factor 186 precursor - mouse
N;Alternate names: VRF 186 protein, VEGF 186
C;Species: Mus musculus (house mouse)
C;Date: 10-May-1996 #sequence_revision 19-Jul-1996 #text_change 05-Nov-1999
C;Accession: JC4679
R;Townson, S.; Lagercrantz, J.; Grimmond, S.; Silins, G.; Nordenskjoeld, M.; Weber, G
Biochem. Biophys. Res. Commun. 220, 922-928, 1996
A;Title: Characterization of the murine VEGF related factor gene.
A;Reference number: JC4679; MUID:96183052
A;Accession: JC4679
A;Molecule type: mRNA
A;Residues: 1-207 <TOW>
A;Cross-references: GB:U43836; NID:g1704480; PIDN:AAC52932.1; PID:g1314334
C;Comment: This factor is a mitogen, that is selective for endothelial cells, and bel
lar endothelial growth factors 167 and 186.
C;Genetics:
A;Gene: vrf
A;Map position: 19
C;Keywords: growth factor
F;1-21/Domain: signal sequence #status predicted <SIG>

```
F;22-27/Product: vascular endothelial growth factor related factor #status predicted <M

  Query Match             26.9%;  Score 97.5;  DB 2;  Length 207;
  Best Local Similarity   35.2%;  Pred. No. 0.00056;
  Matches   19;  Conservative    8;  Mismatches   24;  Indels    3;  Gaps    1;

Qy       1 RCGGCCNSPCLQCMNTSISYLSKTLFFITVPLSQGPKPVTISFANHTSCRC-MSK 54
           |||||| :|||:| |    :  |  | ||  :   :|   |: | |  |  |
Db      77 RCGGCCPDDGLECVPTGQHQVRMQIIMIQYPSSQLGE---MSLEEHSQCECPPK 127


RESULT  12
I51295
vascular endothelial growth factor - quail (fragment)
C;Species: Phasianidae gen. sp. (quail)
C;Date: 13-Sep-1996 #sequence_revision 13-Sep-1996 #text_change 28-Feb-1997
C;Accession: I51295
R;Flamme, I.; Breier, G.; Risau, W.
Dev. Biol. 169, 699-712, 1995
A;Title: Vascular endothelial growth factor (VEGF) and VEGF receptor 2 (flk-1) are expre
A;Reference number: I51295; MUID:95301109
A;Accession: I51295
A;Status: preliminary; translated from GP/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-128 <FLA>
A;Cross-references: GB:S78343; NID:g999147; PID:g999148
C;Genetics:
A;Gene: VEGF


  Query Match             26.5%;  Score 96;  DB 2;  Length 128;
  Best Local Similarity   30.6%;  Pred. No. 0.00052;
  Matches   19;  Conservative   10;  Mismatches   21;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSPCLQCMNTSISYLSKTLFFITVPLS-----QGPKPVTISFANHTSCRC-MSKL 55
           || |||  |||:|:          :: ::|: ::     |      :||  |: | |  |
Db      28 RCAGCCGDEGLECVPVD-------VYNVTMEIARIKPHQSQHIAEMSFLQHSKCDCRPKK 75

Qy      56 DV 57
           ||
Db      76 DV 77


RESULT  13
B49530
vascular endothelial growth factor homolog A2R, 14.7K - orf virus
C;Species: orf virus
C;Date: 07-Apr-1994 #sequence_revision 18-Nov-1994 #text_change 08-Oct-1996
C;Accession: B49530
R;Lyttle, D.J.; Fraser, K.M.; Fleming, S.B.; Mercer, A.A.; Robinson, A.J.
J. Virol. 68, 84-92, 1994
A;Title: Homologs of vascular endothelial growth factor are encoded by the poxvirus orf
A;Reference number: A49530; MUID:94076465
A;Contents: NA2
A;Accession: B49530
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-133 <LYT>
A;Cross-references: GB:S67520; NID:g456897; PIDN:AAB29220.1; PID:g456899
A;Note: sequence inconsistent with nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:141420, NCBIP:141425)


  Query Match             26.2%;  Score 95;  DB 2;  Length 133;
  Best Local Similarity   37.3%;  Pred. No. 0.00071;
  Matches   19;  Conservative    7;  Mismatches   23;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKTLFFITVPLSQGPKPVTISFANHTSCRC 51
           |||||||  | :|: |    ::  |   :   | | :   :||  |  | |
Db      66 RCGGCCNDESLECVPTEEVNVTMELLGASGSGSNGMQ--RLSFVEHKKCDC 114


RESULT  14
A41236
placental growth factor precursor - human
C;Species: Homo sapiens (man)
C;Date: 19-Jun-1992 #sequence_revision 19-Jun-1992 #text_change 05-Nov-1999
C;Accession: A41236
R;Maglione, D.; Guerriero, V.; Viglietto, G.; Delli-Bovi, P.; Persico, M.G.
Proc. Natl. Acad. Sci. U.S.A. 88, 9267-9271, 1991
A;Title: Isolation of a human placenta cDNA coding for a protein related to the vascu
A;Reference number: A41236; MUID:92021031
A;Accession: A41236
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-149 <MAG>
A;Cross-references: GB:X54936; NID:g35521; PIDN:CAA38698.1; PID:g35522
C;Genetics:
A;Gene: GDB:PGF
A;Cross-references: GDB:184676; OMIM:601121
A;Map position: 14q24-14q31


  Query Match             26.0%;  Score 94;  DB 2;  Length 149;
  Best Local Similarity   34.0%;  Pred. No. 0.001;
  Matches   18;  Conservative    9;  Mismatches   20;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKTLFFITVPLSQGPKP--VTISFANHTSCRC 51
           || |||  | | |:   |: ::  | :|      | :|  | ::|: |  | |
Db      82 RCTGCCGDENLHCVPVETANVIMQLLKI----RSGDRPSYVELIFSQHVRCEC 130


RESULT  15
A56125
placental growth factor precursor - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 19-Oct-1995 #sequence_revision 19-Oct-1995 #text_change 05-Nov-1999
C;Accession: A56125
R;DiSalvo, J.; Bayne, M.L.; Conn, G.; Kwok, P.W.; Trivedi, P.G.; Soderman, D.D.; Pali
J. Biol. Chem. 270, 7717-7723, 1995
A;Title: Purification and characterization of a naturally occurring vascular endothel
A;Reference number: A56125; MUID:95221439
A;Accession: A56125
A;Status: preliminary; not compared with conceptual translation
A;Molecule type: mRNA
A;Residues: 1-158 <DIS>
A;Cross-references: GB:L40030; NID:g1263413; PIDN:AAA97426.1; PID:g1263414
C;Keywords: glycoprotein


  Query Match             24.4%;  Score 88.5;  DB 2;  Length 158;
  Best Local Similarity   31.6%;  Pred. No. 0.0047;
  Matches   18;  Conservative   12;  Mismatches   24;  Indels    3;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKTLFFITVPLSQGPKP-VTISFANHTSCRCMSKLD 56
           || |||  ||| |:   |: ::  : :|  | :: |   | ::|:   | |   |:
Db      78 RCSGCCGDEGIHCVALKTANITMQILKI--RPNRDPHSYVEMIFSQDVLCECRPILE 132


Search completed: December 26, 2001, 11:31:03
Job time: 431 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:41:01 ; Search time 43.99 Seconds
(without alignments)
60.077 Million cell updates/sec

Title: US-09-534-376A 8_COPY_161_227
Perfect score: 462
Sequence: 1 RCSGGCNSEGLQCMNTSISY.....SCRCMSKLDVYRQVHSIIRR 67

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 100059 seqs, 36664827 residues

Total number of hits satisfying chosen parameters: 100059

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	462	100.0	419	1	VEGC_HUMAN	P49767 homo sapien
2	458	98.9	415	1	VEGC_MOUSE	P97953 mus musculu
3	126	34.8	215	1	VEGF_HUMAN	P15692 homo sapien
4	119	32.9	190	1	VEGF_PIG	P49151 sus scrofa
5	111	30.7	164	1	VEGF_CAVPO	P26617 cavia porce
6	109	30.1	146	1	VEGF_SHEEP	P50412 ovis aries
7	109	30.1	190	1	VEGF_BOVIN	P15691 bos taurus
8	107	29.6	214	1	VEGF_MOUSE	Q00731 mus musculu
9	106	29.3	190	1	VEGF_RAT	P16612 rattus norv
10	98	27.1	133	1	VEGH_ORFN2	P52584 orf virus (
11	97.5	26.9	188	1	VEGB_HUMAN	P49765 homo sapien
12	97.5	26.9	188	1	VEGB_MOUSE	P49766 mus musculu
13	96	26.5	216	1	VEGF_CPIPX	P52582 gallus gall
14	93	25.7	170	1	PLGF_HUMAN	P49763 homo sapien
15	86.5	23.9	158	1	PLGF_MOUSE	P49764 mus musculu
16	85.5	23.6	226	1	ISIS_SMSAV	P01128 simian sarc
17	85.5	23.6	241	1	PDGB_HUMAN	P01127 homo sapien
18	85.5	23.6	241	1	PDGB_SHEEP	Q95229 ovis aries
19	84.5	23.3	245	1	PDGB_FFICA	P12419 felis silve
20	84	23.2	148	1	VEGH_ORFN7	P52585 orf virus (
21	81.5	22.5	225	1	PDGB_RAT	Q05028 rattus norv
22	81.5	22.5	241	1	PDGB_MOUSE	P31240 mus musculu
23	69.5	19.2	204	1	PDGA_RAT	P28576 rattus norv
24	69.5	19.2	211	1	PDGA_HUMAN	P04085 homo sapien
25	69.5	19.2	211	1	PDGA_MOUSE	P20333 mus musculu
26	69.5	19.2	213	1	PDGA_RABIT	P34007 oryctolagus
27	69	19.1	226	1	PDGA_XENLA	P13698 xenopus lae
28	64.5	17.8	711	1	Y175_HUMAN	Q9y473 homo sapien
29	64	17.7	882	1	PML_HUMAN	P29590 homo sapien
30	62	17.1	736	1	GEPH_HUMAN	Q9nqx3 homo sapien
31	62	17.1	736	1	GEPH_RAT	Q03555 rattus norv
32	61.5	17.0	71	1	MII_CASGL	Q39511 casuarina g
33	61.5	17.0	97	1	GLHA_RANCA	P80061 rana catesb
34	61	16.9	117	1	GLHA_ACALA	P30970 acanthopagr
35	60	16.6	174	1	VS11_ROTGI	P30890 rotavirus (
36	60	16.6	271	1	IOD3_XENLA	P49899 xenopus lae
37	60	16.6	400	1	YL47_CAEEL	P34428 caenorhabdi
38	60	16.6	3712	1	LMA_DROME	Q00174 drosophila
39	59	16.3	117	1	GLHA_MORSA	Q91119 morone saxa
40	59	16.3	1332	1	XDH_HUMAN	P47989 homo sapien
41	58.5	16.2	123	1	GLHA_HORSE	P01229 e qlycoprot
42	58	16.0	94	1	GLHA_THUOB	P37204 thunnus obe
43	58	16.0	434	1	CBPH_BOVIN	P04836 bos taurus
44	58	16.0	764	1	PIGR_HUMAN	P01833 homo sapien
45	57.5	15.9	926	1	SBP4_YEAST	P32571 saccharomyc

ALIGNMENTS

RESULT 1
VEGC_HUMAN
ID VEGC_HUMAN STANDARD; PRT; 419 AA.
AC P49767;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 20-AUG-2001 (Rel. 40, Last annotation update)
DE VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF-C) (VASCULAR
DE ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRP) (FLT4 LIGAND) (FLT4-
DE L).
GN VEGFC.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 103-120.
RX MEDLINE=96178224; PubMed=8617204;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RT "A novel vascular endothelial growth factor, VEGF-C, is a ligand for
RT the Flt4 (VEGFR-3) and KDR (VEGFR-2) receptor tyrosine kinases.";
RL EMBO J. 15:290-298(1996).
RN [2]
RP ERRATUM.
RX MEDLINE=96203094; PubMed=8612600;
RA Joukov V., Pajusola K., Kaipainen A., Chilov D., Lahtinen I., Kukk E.,
RA Saksela O., Kalkkinen N., Alitalo K.;
RL EMBO J. 15:1751-1751(1996).
RN [3]
RP SEQUENCE FROM N.A.
RX MEDLINE=96312526; PubMed=8700872;
RA Lee J., Gray A., Yuan J., Luoh S.-M., Avraham H., Wood W.I.;
RT "Vascular endothelial growth factor-related protein: a ligand and
RT specific activator of the tyrosine kinase receptor Flt4.";
RL Proc. Natl. Acad. Sci. U.S.A. 93:1988-1992(1996).
RN [4]
RP SEQUENCE FROM N.A.
RA Fitz L., Morris J.C., Fowler P.S., Long A.J., Greco R.,
RA Burgess P., Giannotti I., Ciarletta A., Bonnessey D., Kovacic S.,
RA Fitzgerald M., Scaltreto H., Welch N., Neben S., Finnerty H.,
RA Zollner R., Wang J., Nickbarg E., Cassaway P., Turner K.,
RA Wood C.R.;
RL Submitted (JUN-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC CELL GROWTH.
CC -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC -!- PTM: PROBABLY PROTEOLITICALLY PROCESSED IN THE C TERMINUS.
CC -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC ---

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CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X94216; CAA64907.1; -.
DR   EMBL; D43142; AAA85214.1; -.
DR   EMBL; U58111; AAB02909.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601528; -.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GPCYSKNOT.
DR   Prodom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PROPEP       ?    102       POTENTIAL.
FT   CHAIN      103    419       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN     275    365       4 X 24 AA TANDEM REPEATS.
FT   REPEAT     275    298       1.
FT   REPEAT     299    322       2.
FT   REPEAT     323    346       3.
FT   REPEAT     347    365       4 (PARTIAL).
FT   CARBOHYD   175    175       N-LINKED (GLCNAC...) (POTENTIAL).
FT   CARBOHYD   205    205       N-LINKED (GLCNAC...) (POTENTIAL).
FT   CARBOHYD   240    240       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   419 AA;  46883 MW;  9F598719DB4E014F CRC64;


  Query Match             100.0%;  Score 462;  DB 1;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 4.4e-36;
  Matches   67;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     161 RCGGCCNSEGLQCMNTSISYLSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 220

Qy      61 VHSIIRR 67
           |||||||
Db     221 VHSIIRR 227


RESULT   2
VEGC_MOUSE
ID   VEGC_MOUSE     STANDARD;      PRT;   419 AA.
AC   P97953;
DT   15-JUL-1998 (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR (VEGF C) (FLT4 LIGAND)
DE   (FLT4 L).
GN   VEGFC.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciuromorpha; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97161697; PubMed=9012504;
RA   Kukk E., Lymboussaki A., Taira S., Kaipainen A., Jeltsch M.,
RA   Joukov V., Alitalo K.;
RT   "VEGF-C receptor binding and pattern of expression with VEGFR-3
RT   suggests a role in lymphatic vascular development.";
RL   Development 122:3829-3837(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=BALB/C;
RX   MEDLINE=97388482; PubMed=9247316;
RA   Fitz L.J., Morris J.C., Fowler P., Long A., Burgess P., Greco R.,
RA   Wang J., Gassaway R., Nickbarg E., Kovacic S., Ciarletta A.,
RA   Giannotti J., Finnerty H., Zollner R., Beier D.R., Leak L.V.,
RA   Turner K.J., Wood C.R.;
RT   "Characterization of murine Flt4 ligand/VEGF-C.";
RL   Oncogene 15:613-618(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ----------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; U73620; AAC52984.1; -.
DR   EMBL; U58112; AAB46707.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:109124; Vegfc.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GPCYSKNOT.
DR   Prodom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Repeat.
FT   SIGNAL       1      ?       POTENTIAL.
FT   PROPEP       ?     98       POTENTIAL.
FT   CHAIN       99    415       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
FT   DOMAIN     271    361       4 X 24 AA TANDEM REPEATS.
FT   REPEAT     271    294       1.
FT   REPEAT     295    318       2.
FT   REPEAT     319    342       3.
FT   REPEAT     343    361       4 (PARTIAL).
FT   CARBOHYD   171    171       N-LINKED (GLCNAC...) (POTENTIAL).
FT   CARBOHYD   201    201       N-LINKED (GLCNAC...) (POTENTIAL).
FT   CARBOHYD   236    236       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   415 AA;  46471 MW;  D9D3DD4CECC659D6 CRC64;


  Query Match             98.9%;  Score 458;  DB 1;  Length 415;
  Best Local Similarity   98.5%;  Pred. No. 1e-45;
  Matches   66;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||||| ||||||||||||||||||||||||||||||||||||||||||||
Db     157 RCGGCCNSEGIQCMNTSTGYLSKILFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 216

Qy      61 VHSIIRR 67
           |||||||
Db     217 VHSIIRR 223


RESULT   3
VEGF_HUMAN
ID   VEGF_HUMAN     STANDARD;      PRT;   215 AA.
AC   P15692;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF OR VEGFA.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=90069608; PubMed=2479986;
```

```
RA   Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT   "Vascular endothelial growth factor is a secreted angiogenic
RT   mitogen.";
RL   Science 246:1306-1309(1989).
RN   [2]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RX   MEDLINE=90069609; PubMed=2479987;
RA   Keck P.J., Hauser S.D., Krivi G., Sanzo K., Warren T., Feder J.,
RA   Connolly D.T.;
RT   "Vascular permeability factor, an endothelial cell mitogen related to
RT   PDGF.";
RL   Science 246:1309-1312(1989).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=91268072; PubMed=1711045;
RA   Tischer E., Mitchell R., Hartman T., Silva M., Gospodarowicz D.,
RA   Fiddes J.C., Abraham J.A.;
RT   "The human gene for vascular endothelial growth factor. Multiple
RT   protein forms are encoded through alternative exon splicing.";
RL   J. Biol. Chem. 266:11947-11954(1991).
RN   [4]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92231879; PubMed=1567395;
RA   Weindel K., Marme D., Weich H.A.;
RT   "AIDS-associated Kaposi's sarcoma cells in culture express vascular
RT   endothelial growth factor.";
RL   Biochem. Biophys. Res. Commun. 183:1167-1174(1992).
RN   [5]
RP   PRELIMINARY SEQUENCE OF 27-36; 43-50 AND 59-81.
RX   MEDLINE=90062112; PubMed=2584205;
RA   Connolly D.T., Olander J.V., Heuvelman D., Nelson R., Monsell R.,
RA   Siegel N., Haymore B.L., Leimgruber R., Feder J.;
RT   "Human vascular permeability factor. Isolation from U937 cells.";
RL   J. Biol. Chem. 264:20017-20024(1989).
RN   [6]
RP   SEQUENCE OF 27-41.
RX   MEDLINE=93145946; PubMed=7678805;
RA   Fiebich B.L., Jaeger B., Schoellmann G., Weindel K., Wilting J.,
RA   Kochs G., Marme D., Hug H., Weich H.A.;
RT   "Synthesis and assembly of functionally active human vascular
RT   endothelial growth factor homodimers in insect cells.";
RL   Eur. J. Biochem. 211:19-26(1993).
RN   [7]
RP   X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS) OF 34-135.
RX   MEDLINE 97352774; PubMed=9207067;
RA   Muller Y.A., Li B., Christinger H.W., Wells J.A., Cunningham B.C.,
RA   de Vos A.M.;
RT   "Vascular endothelial growth factor: crystal structure and functional
RT   mapping of the kinase domain receptor binding site.";
RL   Proc. Natl. Acad. Sci. U.S.A. 94:7192-7197(1997).
RN   [8]
RP   X-RAY CRYSTALLOGRAPHY (1.93 ANGSTROMS) OF 34-135.
RX   MEDLINE 98035455; PubMed=9351807;
RA   Muller Y.A., Christinger H.W., Keyt B.A., de Vos A.M.;
RT   "The crystal structure of vascular endothelial growth factor (VEGF)
RT   refined to 1.93 A resolution: multiple copy flexibility and receptor
RT   binding.";
RL   Structure 5:1325-1338(1997).
RN   [9]
RP   X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 49-134.
RX   MEDLINE 99119204; PubMed=9922142;
RA   Wiesmann C., Christinger H.W., Cochran A.G., Cunningham B.C.,
RA   Fairbrother W.J., Keenan C.J., Menq G., de Vos A.M.;
RT   "Crystal structure of the complex between VEGF and a receptor-blocking
RT   peptide.";
RL   Biochemistry 37:17765-17772(1998).
RN   [10]
RP   STRUCTURE BY NMR OF 34-135.
RX   MEDLINE 97477915; PubMed=9336848;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "1H, 13C, and 15N backbone assignment and secondary structure of the
RT   receptor-binding domain of vascular endothelial growth factor.";
RL   Protein Sci. 6:2250-2260(1997).
RN   [11]
RP   STRUCTURE BY NMR OF 137-215.
RX   MEDLINE=98298440; PubMed=9634701;
RA   Fairbrother W.J., Champe M.A., Christinger H.W., Keyt B.A.,
RA   Starovasnik M.A.;
RT   "Solution structure of the heparin binding domain of vascular
RT   endothelial growth factor.";
RL   Structure 6:637-648(1998).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: FOUR FORMS OF VEGF ARE PRODUCED BY
CC       ALTERNATIVE SPLICING OF THE SAME GENE (VEGF-121, VEGF-165,
CC       VEGF-189 AND VEGF-215).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M32977; AAA35789.1; -.
DR   EMBL; M27281; AAA36807.1; -.
DR   EMBL; M63978; AAA36804.1; -.
DR   EMBL; M63971; AAA36804.1; JOINED.
DR   EMBL; M63972; AAA36804.1; JOINED.
DR   EMBL; M63973; AAA36804.1; JOINED.
DR   EMBL; M63974; AAA36804.1; JOINED.
DR   EMBL; M63975; AAA36804.1; JOINED.
DR   EMBL; M63976; AAA36804.1; JOINED.
DR   EMBL; M63977; AAA36804.1; JOINED.
DR   EMBL; X62568; CAA44447.1; -.
DR   PIR; A34492; A34492.
DR   PIR; A40079; A40079.
DR   PIR; A40080; A40080.
DR   PIR; A40454; A40454.
DR   PIR; B40454; B40454.
DR   PIR; C40454; C40454.
DR   PIR; JQ1463; JQ1463.
DR   PIR; JQ1464; JQ1464.
DR   PIR; S17348; S17348.
DR   PDB; 1VGH; 08-APR-98.
DR   PDB; 2VGH; 08-APR-98.
DR   PDB; 1VPF; 08-APR-98.
DR   PDB; 2VPF; 29-JUL-98.
DR   PDB; 1VPP; 23-FEB-99.
DR   MIM; 192240; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal;
KW   3D-structure.
FT   SIGNAL       1     26
FT   CHAIN       27    215       VASCULAR ENDOTHELIAL GROWTH FACTOR
FT   DISULFID    52     94
FT   DISULFID    83    128
FT   DISULFID    87    130
FT   DISULFID    77     77       INTERCHAIN.
FT   DISULFID    86     86       INTERCHAIN.
FT   CARBOHYD   101    101       N-LINKED (GLCNAC...).
FT   VARSPLIC   141    141       K -> N (IN ISOFORM VEGF-121 AND ISOFORM
FT                               VEGF-165).
```

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FT   VARSPLIC    142    165        MISSING (IN ISOFORM VEGF-165).
FT   VARSPLIC    142    209        MISSING (IN ISOFORM VEGF-121).
SQ   SEQUENCE   215 AA;  25173 MW;  7B9759AD5871FF33 CRC64;


  Query Match             44.9%;  Score 126;  DB 1;  Length 215;
  Best Local Similarity   39.4%;  Pred. No. 4.1e-08;
  Matches   26;  Conservative    7;  Mismatches   31;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |      ||      :|| |  | | |  | ||
Db      82 RCGGCCNDEGLECVPTEESNITMQIMRIKP  HQGQHIGEMSFLQHNKCECRPKKDRARQ 139

Qy      61 VHSTIR 66
           :|
Db     140 EKKSVR 145


RESULT   4
VEGF_PIG
ID   VEGF_PIG       STANDARD;      PRT;   190 AA.
AC   P49151;
DT   01-FEB-1996 (Rel. 34, Created)
DT   01-FEB-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID=9823;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=95143284; PubMed=7841203;
RA   Sharma H.S., Tauq Z.B., Cho B.C.H., Verdonw P.D.;
RT   "Nucleotide sequence and expression of the porcine vascular
RT   endothelial growth factor.";
RL   Biochim. Biophys. Acta 1260:245-248(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY (BY SIMILARITY).
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------- ---- ---------- ---------- ---- ---------- ---- ----------
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CC   or send an email to license@isb-sib.ch).
CC   ---------- ---- ---------- ---------- ---- ---------- ---- ----------
DR   EMBL; X81480; CAA57143.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL       1     26       POTENTIAL.
FT   CHAIN       27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID    51     93       BY SIMILARITY.
FT   DISULFID    82    127       BY SIMILARITY.
FT   DISULFID    86    129       BY SIMILARITY.
FT   DISULFID    76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID    85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD   100    100       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   190 AA;  22368 MW;  04D4088D7913047F CRC64;


  Query Match             42.9%;  Score 119;  DB 1;  Length 190;
  Best Local Similarity   40.0%;  Pred. No. 2.5e-07;
  Matches   26;  Conservative    5;  Mismatches   22;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL----SQGPKPVTISFANHTSCRCMSKL 55
           |||||||  |||:|: |          | ||:  :      ||     :|| |  | |  |
Db      81 RCGGCCNDEGLECVPTEE---  --ENITMQIMRIKPHQGQHIGEMSFLQHNKCECRPKK 133

Qy      56 DVYRQ 60
           |  ||
Db     134 DRARQ 138


RESULT   5
VEGF_CAVPO
ID   VEGF_CAVPO     STANDARD;      PRT;   164 AA.
AC   P26617;
DT   01-AUG-1992 (Rel. 23, Created)
DT   01-AUG-1992 (Rel. 23, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) (VASCULAR PERMEABILITY
DE   FACTOR) (VPF).
GN   VEGF.
OS   Cavia porcellus (Guinea pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
OX   NCBI_TaxID=10141;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Berse B.;
RL   Submitted (XXX-1992) to the EMBL/GenBank/DDBJ databases.
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------- ---- ---------- ---------- ---- ---------- ---- ----------
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CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------- ---- ---------- ---------- ---- ---------- ---- ----------
DR   EMBL; M84230; AAA37057.1; -.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein.
FT   DISULFID    25     67       BY SIMILARITY.
FT   DISULFID    56    101       BY SIMILARITY.
FT   DISULFID    60    103       BY SIMILARITY.
FT   DISULFID    50     50       INTERCHAIN (BY SIMILARITY).
FT   DISULFID    59     59       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    74     74       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   164 AA;  19330 MW;  9EB86A81A9D5DCA4 CRC64;


  Query Match             30.7%;  Score 111;  DB 1;  Length 164;
  Best Local Similarity   36.9%;  Pred. No. 2e-06;
  Matches   24;  Conservative    7;  Mismatches   22;  Indels   12;  Gaps    2;
```

```
Qy       1 RCGGCCNSEGLQCMNTSISYLSKTLEELTVPL-----SQGPKPVTLSFANHTSCRCMSKL 55
           ||||||| | ||:| :          | ||: :      ||     :|| |: | | |  |
Db      55 RCGGCCNDESLECVPTEE------ENITMQIMRIKPHQGQHIGEMSFLQHSKCECRPKK 107

Qy      56 DVYRQ 60
           :  |:
Db     108 EKAPQ 112


RESULT   6
VEGF_SHEEP
ID   VEGF_SHEEP     STANDARD;      PRT:   146 AA.
AC   P50412;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Ovis aries (Sheep).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Caprinae; Ovis.
OX   NCBI_TaxID=9940;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Kidney;
RX   MEDLINE=97117958; PubMed=8958842;
RA   Redmer D.A., Doraiswamy V., Bortnem B.J., Vonnahme K.A.,
RA   Reynolds L.P., Moor R.M.;
RT   "Characterization and expression of vascular endothelial growth
RT   factor (VEGF) in the ovine corpus luteum.";
RL   J. Reprod. Fertil. 108:157-165(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X89506; CAA61677.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    146       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   146 AA;  17247 MW;  4E792CB557F91760 CRC64;


  Query Match             80.1%;  Score 109;  DB 1;  Length 146;
  Best Local Similarity   38.7%;  Prod. No. 3e-06;
  Matches   24;  Conservative    6;  Mismatches   26;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSISYLSKTLEELTVPLSQ--GPKPVTLSFANHTSCRCMSKLDVY 58
           ||||||| | ||:| :    ::  :  |    ||  |      :|| |  | | | | |
Db      81 RCGGCCNDESLECVPTEEENITMQIMRIKPHQSQHIG----EMSFLQHNKCECRPKKDKA 136

Qy      59 RQ 60
           ||
Db     137 RQ 138


RESULT   7
VEGF_BOVIN
ID   VEGF_BOVIN     STANDARD;      PRT:   190 AA.
AC   P15691;
DT   01-APR-1990 (Rel. 14, Created)
DT   01-APR-1990 (Rel. 14, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-47.
RX   MEDLINE=90069608; PubMed=2479986;
RA   Leung D.W., Cachianes G., Kuang W.-J., Goeddel D.V., Ferrara N.;
RT   "Vascular endothelial growth factor is a secreted angiogenic
RT   mitogen.";
RL   Science 246:1306-1309(1989).
RN   [2]
RP   SEQUENCE OF 27-190 FROM N.A.
RX   MEDLINE=90121225; PubMed=2610687;
RA   Tischer E., Gospodarowicz D., Mitchell R., Silva M., Schilling J.,
RA   Lau K., Crisp T., Fiddes J.C., Abraham J.A.;
RT   "Vascular endothelial growth factor: a new member of the platelet-
RT   derived growth factor gene family.";
RL   Biochem. Biophys. Res. Commun. 165:1198-1206(1989).
RN   [3]
RP   SEQUENCE OF 27-31.
RX   MEDLINE=89286596; PubMed=2735425;
RA   Ferrara N., Henzel W.J.;
RT   "Pituitary follicular cells secrete a novel heparin-binding growth
RT   factor specific for vascular endothelial cells.";
RL   Biochem. Biophys. Res. Commun. 161:851-858(1989).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M32976; AAA30502.1; -.
DR   EMBL; M31836; AAA30804.1; -.
DR   EMBL; M33750; AAA30805.1; -.
DR   PIR; A33255; A33255.
DR   PIR; A33787; A33787.
DR   PIR; B40080; B40080.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
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DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC...) (POTENTIAL).
FT   VARSPLIC    139    183       MISSING (IN ISOFORM BETA).
FT   VARSPLIC    184    184       R -> K (IN ISOFORM BETA).
SQ   SEQUENCE   190 AA;  22310 MW;  EDBF903E46E24789 CRC64;


  Query Match             30.1%;  Score 109;  DB 1;  Length 190;
  Best Local Similarity   38.7%;  Pred. No. 4e-06;
  Matches   24;  Conservative    6;  Mismatches   26;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNISTSYLSKILFELTIVPLSQ--GPKPVTISFANHTSCRCMSKLDVY 58
           |||||||.|.|:|.|    ::  :.|    ||.|     :||  |  |.|  |.|
Db      81 RCGGCCNDESLECVPTEEPNITMQIMRIKPHQSQHIG---EMSFLQHNKCECRPKKDRA 136

Qy      59 RQ 60
           ||
Db     137 RQ 138


RESULT   8
VEGF_MOUSE
ID   VEGF_MOUSE     STANDARD;      PRT:   214 AA.
AC   Q00731;
DT   01-APR-1993 (Rel. 25, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92274860; PubMed=1592803;
RA   Breier G., Albrecht U., Sterrer S., Risau W.;
RT   "Expression of vascular endothelial growth factor during embryonic
RT   angiogenesis and endothelial cell differentiation.";
RL   Development 114:521-532(1992).
RN   [2]
RP   SEQUENCE FROM N.A. (VEGF 1).
RX   MEDLINE=92355593; PubMed=1644816;
RA   Claffey K.P., Wilkison W.O., Spiegelman B.M.;
RT   "Vascular endothelial growth factor. Regulation by cell
RT   differentiation and activated second messenger pathways.";
RL   J. Biol. Chem. 267:16317-16322(1992).
RN   [3]
RP   SEQUENCE OF 1-8 FROM N.A.
RX   MEDLINE=96216498; PubMed=8632007;
RA   Shima D.T., Kuroki M., Deutsch U., Ng Y., Adamis A.P., D'Amore P.A.;
RT   "The mouse gene for vascular endothelial growth factor. Genomic
RT   structure, definition of the transcriptional unit, and
RT   characterization of transcriptional and post-transcriptional
RT   regulatory sequences.";
RL   J. Biol. Chem. 271:3877-3883(1996).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE LINKED.
CC   -!- SUBCELLULAR LOCATION: VEGF-1 AND VEGF-2 ARE SECRETED WHILE
CC       VEGF-3 REMAINS CELL SURFACE ASSOCIATED UNLESS RELEASED BY
CC       HEPARIN.
CC   -!- ALTERNATIVE PRODUCTS: THREE FORMS (VEGF-1, VEGF-2 AND VEGF-3) ARE
CC       PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME GENE. THE
CC       LONGEST FORM (VEGF-3, SHOWN HERE) CONTAINS A BASIC INSERT LINKED
CC       TO CELL ASSOCIATION/HEPARIN BINDING.
CC   -!- TISSUE SPECIFICITY: IN DEVELOPING EMBRYOS, EXPRESSED MAINLY IN
CC       THE CHOROID PLEXUS, PARAVENTRICULAR NEUROEPITHELIUM, PLACENTA AND
CC       KIDNEY GLOMERULI. ALSO FOUND IN BRONCHIAL EPITHELIUM, ADRENAL
CC       GLAND AND IN SEMINIFEROUS TUBULES OF TESTIS. HIGH EXPRESSION OF
CC       VEGF CONTINUES IN KIDNEY GLOMERULI AND CHOROID PLEXUS IN ADULTS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------- ---------- ---------- ---------- ---------- ----------
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CC   or send an email to license@isb-sib.ch).
CC   ---------- ---------- ---------- ---------- ---------- ----------
DR   EMBL; S37052; AAB22252.1; -.
DR   EMBL; S38088; AAB22253.1; -.
DR   EMBL; S38100; AAB22254.1; -.
DR   EMBL; M95200; AAA40547.1; -.
DR   EMBL; U41383; -; NOT_ANNOTATED_CDS.
DR   PIR; A43351; A43351.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:103178; Vegf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL        1     26       BY SIMILARITY.
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC...) (PROBABLE).
FT   VARSPLIC    140    140       K -> N (IN ISOFORM VEGF-1).
FT   VARSPLIC    141    164       MISSING (IN ISOFORM VEGF-1).
FT   VARSPLIC    141    208       MISSING (IN ISOFORM VEGF-2).
FT   CONFLICT    117    118       GE -> ER (IN REF. 2).
SQ   SEQUENCE   214 AA;  25283 MW;  B5540B51E4BB6E17 CRC64;


  Query Match             29.6%;  Score 107;  DB 1;  Length 214;
  Best Local Similarity   39.7%;  Pred. No. 8e-06;
  Matches   23;  Conservative    7;  Mismatches   22;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNISTSYLSKILFELTIVPLSQ--GPKPVTISFANHTSCRCMSKLD 56
           || |||| | |:|: || |  ::  : |    || |     :|| |:| | |.|  |.|
Db      81 RCAGCCNDEALECVPTSESNITMQIMRIKPHQSQHIG-   EMSFLQHSRCECRPKKD 134


RESULT   9
VEGF_RAT
ID   VEGF_RAT       STANDARD;      PRT:   190 AA.
AC   P16612;
DT   01-AUG-1990 (Rel. 15, Created)
DT   01-AUG-1990 (Rel. 15, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
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OC   Mammalia; Eutheria; Rodentia; Sciuromorpha; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A., AND SEQUENCE OF 27-190.
RX   MEDLINE=90207249; PubMed=2320579;
RA   Conn G., Bayne M.L., Soderman D.D., Kwok P.W., Sullivan K.A.,
RA   Palisi T.M., Hope D.A., Thomas K.A.;
RT   "Amino acid and cDNA sequences of a vascular endothelial cell mitogen
RT   that is homologous to platelet-derived growth factor.";
RL   Proc. Natl. Acad. Sci. U.S.A. 87:2628-2632(1990).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN (BY
CC       SIMILARITY).
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN THE FETAL BRAIN, IN BRAIN,
CC       PARTICULARLY IN SUPRAOPTIC AND PARAVENTRICULAR NUCLEI AND THE
CC       CHOROID PLEXUS. ALSO FOUND ABUNDANTLY IN THE CORPUS LUTEUM OF
CC       THE OVARY AND IN KIDNEY GLOMERULI.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; M32167; AAA41211.1; -.
DR   PIR; A35987; A35987.
DR   HSSP; P15692; 2VGH.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     26
FT   CHAIN        27    190       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID     51     93       BY SIMILARITY.
FT   DISULFID     82    127       BY SIMILARITY.
FT   DISULFID     86    129       BY SIMILARITY.
FT   DISULFID     76     76       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     85     85       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD    100    100       N-LINKED (GLCNAC...).
SQ   SEQUENCE   190 AA;  22396 MW;  589374010441F377 CRC64;


  Query Match             29.3%;  Score 106;  DB 1;  Length 190;
  Best Local Similarity   39.7%;  Pred. No. 9.3e-06;
  Matches   23;  Conservative    7;  Mismatches   22;  Indels    6;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYISKTLFEITVPLSQGPKPVTISFANHTSCRC 56
           ||  |||| | ||: | | ::  : |   || |     ||| |: | | | |
Db      81 RCAGCCNDEALECVPTSESNVTMQIMRIKPHQSQHIG----EMSFLQHSRCECRPKKD 134


RESULT  10
VEGB_OREN2
ID   VEGB_OREN2     STANDARD;      PRT:   133 AA.
AC   P52584;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR HOMOLOG PRECURSOR.
GN   AcR.
OS   Orf virus (strain NZ2) (OV NZ-2).
OC   Viruses; dsDNA viruses, no RNA stage; Poxviridae; Chordopoxvirinae;
OC   Parapoxvirus.
OX   NCBI_TaxID=10259;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=94076465; PubMed=8254780;
RA   Lyttle D.J., Fraser K.M., Fleming S.B., Mercer A.A., Robinson A.J.;
RT   "Homologs of vascular endothelial growth factor are encoded by the
RT   poxvirus orf virus.";
RL   J. Virol. 68:84-92(1994).
CC   -!- FUNCTION: INDUCES ENDOTHELIAL PROLIFERATION.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; S67520; AAB29220.2; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1      ?       POTENTIAL.
FT   CHAIN         ?    133       VASCULAR ENDOTHELIAL GROWTH FACTOR
FT                                HOMOLOG.
FT   DISULFID     46     78       BY SIMILARITY.
FT   DISULFID     67    112       BY SIMILARITY.
FT   DISULFID     71    114       BY SIMILARITY.
FT   DISULFID     61     61       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     70     70       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     85     85       N-LINKED (GLCNAC...) (POTENTIAL).
SQ   SEQUENCE   133 AA;  14715 MW;  917C0F6883030C39 CRC64;


  Query Match             27.1%;  Score 98;  DB 1;  Length 133;
  Best Local Similarity   39.2%;  Pred. No. 5.8e-05;
  Matches   20;  Conservative    6;  Mismatches   24;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYISKTLFEITVPLSQGPKPVTISFANHTSCRC 51
           |||||| | |::  :   :|  |   :  | | :  :|| |  | | |
Db      66 RCGGCCNDESLECVPTEEVNVSMELLGASGSQSNGMQ--RLSFVEHKKCDC 114


RESULT  11
VEGB_HUMAN
ID   VEGB_HUMAN     STANDARD;      PRT:   188 AA.
AC   P49765;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VEGF RELATED
DE   FACTOR).
GN   VEGFB OR VRF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=96197355; PubMed=8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
```

```
RP   SEQUENCE FROM N.A.
RX   MEDLINE 97077124; PubMed 8919691;
RA   Grimmond S., Lagercrantz J., Drinkwater C., Silins G., Townson S.,
RA   Pollock P., Gotley D., Carson E., Rakar S., Nordenskjoeld M., Ward L.,
RA   Hayward N., Weber G.;
RT   "Cloning and characterization of a novel human gene related to
RT   vascular endothelial growth factor.";
RL   Genome Res. 6:124-131(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: EXPRESSED IN ALL TISSUES EXCEPT LIVER.
CC       HIGHEST LEVELS FOUND IN HEART, SKELETAL MUSCLE AND PANCREAS.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U48801; AAB06274.1; -.
DR   EMBL; U43367; AAA91463.1; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601398; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin-binding.
FT   SIGNAL        1     21       POTENTIAL.
FT   CHAIN        22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21261 MW;  F04654D5A3727194 CRC64;


  Query Match             26.9%;  Score 97.5;  DB 1;  Length 188;
  Best Local Similarity   35.2%;  Pred. No. 9.6e-05;
  Matches   19;  Conservative    8;  Mismatches   24;  Indels    3;  Gaps    1;

Qy       1 PCGGCCNSEGLQCMNTSTSYISKFLFEWTVPLSQGPKPVTISFANHTSCRCMSK 54
           ||||||  :||:|: |    :   :  |  | ||  :   :|   |: | |  |
Db      77 PCGGCCPDDGLECVPTGQHQVRMQILMIRYPSSQLGE--MSLEEHSQCECRPK 127


RESULT  12
VEGB_MOUSE
ID   VEGB_MOUSE     STANDARD;      PRT:   188 AA.
AC   P49766;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR B PRECURSOR (VEGF-B) (VASCULAR
DE   ENDOTHELIAL GROWTH FACTOR RELATED PROTEIN) (VRF).
GN   VEGFB OR VRF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciuromorpha; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=96197455; PubMed=8637916;
RA   Olofsson B., Pajusola K., Kaipainen A., von Euler G., Joukov V.,
RA   Saksela O., Orpana A., Pettersson R.F., Alitalo K., Eriksson U.;
RT   "Vascular endothelial growth factor B, a novel growth factor for
RT   endothelial cells.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:2576-2581(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Brain;
RX   MEDLINE=96183052; PubMed=8607868;
RA   Townson S., Lagercrantz J., Grimmond S., Silins G.,
RA   Nordenskjoeld M., Weber G., Hayward N.K.;
RT   "Characterization of the murine VEGF-related factor gene.";
RL   Biochem. Biophys. Res. Commun. 220:922-928(1996).
CC   -!- FUNCTION: GROWTH FACTOR FOR ENDOTHELIAL CELLS. BINDS HEPARIN.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED. CAN ALSO FORM HETERODIMER
CC       WITH VEGF.
CC   -!- SUBCELLULAR LOCATION: SECRETED BUT REMAINS ASSOCIATED TO CELLS OR
CC       TO THE EXTRACELLULAR MATRIX UNLESS RELEASED BY HEPARIN.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY EXPRESSED IN HEART, BRAIN, KIDNEY
CC       AND SKELETAL MUSCLE.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; U48800; AAB06273.1; -.
DR   EMBL; U43847; AAC52553.1; -.
DR   HSSP; P15692; 2VGH.
DR   MGD; MGI:106199; Vegfb.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Signal; Heparin-binding.
FT   SIGNAL        1     21       POTENTIAL.
FT   CHAIN        22    188       VASCULAR ENDOTHELIAL GROWTH FACTOR B.
SQ   SEQUENCE   188 AA;  21442 MW;  D52A055FB995E9CA CRC64;


  Query Match             26.9%;  Score 97.5;  DB 1;  Length 188;
  Best Local Similarity   35.2%;  Pred. No. 9.6e-05;
  Matches   19;  Conservative    8;  Mismatches   24;  Indels    3;  Gaps    1;

Qy       1 PCGGCCNSEGLQCMNTSTSYISKFLFEWTVPLSQGPKPVTISFANHTSCRCMSK 54
           ||||||  :||:|: |    :   :  |  | ||  :   :|   |: | |  |
Db      77 PCGGCCPDDGLECVPTGQHQVRMQILMIQYPSSQLGE--MSLEEHSQCECKPK 127


RESULT  13
VEGF_CHICK
ID   VEGF_CHICK     STANDARD;      PRT:   216 AA.
AC   P52582; Q91420;
DT   01-OCT-1996 (Rel. 34, Created)
DT   15-JUL-1998 (Rel. 36, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR PRECURSOR (VEGF) (VASCULAR
DE   PERMEABILITY FACTOR) (VPF).
GN   VEGF.
OS   Gallus gallus (Chicken), and
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Gallus.
OX   NCBI_TaxID=9031, 93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   SPECIES=Chicken; TISSUE=Heart;
RA   Takahashi T.;
RL   Submitted (FEB-1998) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
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```
RC   SPECIES=C.c.japonica; TISSUE=Embryo;
RX   MEDLINE=96005007; PubMed=7556923;
RA   Flamme I., von Reutern M., Drexler H.C., Syed-Ali S., Risau W.;
RT   "Overexpression of vascular endothelial growth factor in the avian
RT   embryo induces hypervascularization and increased vascular
RT   permeability without alterations of embryonic pattern formation.";
RL   Dev. Biol. 171:399-414(1995).
RN   [3]
RP   SEQUENCE OF 60-187 FROM N.A.
RC   SPECIES=C.c.japonica;
RX   MEDLINE=95301109; PubMed=7781909;
RA   Flamme I., Breier G., Risau W.;
RT   "Vascular endothelial growth factor (VEGF) and VEGF receptor 2
RT   (flk-1) are expressed during vasculogenesis and vascular
RT   differentiation in the quail embryo.";
RL   Dev. Biol. 169:699-712(1995).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH, INDUCES ENDOTHELIAL PROLIFERATION AND VASCULAR
CC       PERMEABILITY.
CC    !- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- ALTERNATIVE PRODUCTS: THREE ISOFORMS (VEGF-190, VEGF-146 AND VEGF
CC       166) ARE PRODUCED AS A RESULT OF ALTERNATIVE SPLICING OF THE SAME
CC       GENE. THE LONGER FORM CONTAINS A BASIC INSERT WHICH ACTS AS A CELL
CC       RETENTION SIGNAL.
CC   -!- TISSUE SPECIFICITY: ABUNDANTLY AND EQUALLY EXPRESSED IN HEART AND
CC       LIVER. IN KIDNEY GLOMERULI, BRAIN AND YOLK SAC, VEGF-166 FORM IS
CC       5- TO 10- TIMES MORE ABUNDANT THAN THE VEGF-190 FORM.
CC   -!- DEVELOPMENTAL STAGE: THE VEGF-166 FORM IS EXPRESSED EARLY AT DAY 1
CC       AND IS UPREGULED DURING GASTRULATION. EXPRESSION OF THE VEGF 190
CC       FORM IS DETECTABLE ONLY FROM DAY 2.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   ---------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; AB011078; BAA24925.1; -.
DR   EMBL; S79680; AAB35371.1; -.
DR   BSSP; P15692; 2VGH
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Alternative splicing; Signal.
FT   SIGNAL       1     26       BY SIMILARITY.
FT   CHAIN       27    215       VASCULAR ENDOTHELIAL GROWTH FACTOR.
FT   DISULFID    83    128       BY SIMILARITY.
FT   DISULFID    87    130       BY SIMILARITY.
FT   DISULFID    77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID    86     86       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD   101    101       N-LINKED (GLCNAC...) (POTENTIAL).
FT   VARSPLIC   142    142       E -> N (IN ISOFORM VEGF 166).
FT   VARSPLIC   143    166       MISSING (IN ISOFORM VEGF-166).
FT   VARSPLIC   166    166       E -> L (IN ISOFORM VEGF 146).
FT   VARSPLIC   167    210       MISSING (IN ISOFORM VEGF-146).
SQ   SEQUENCE   215 AA;  25203 MW;  B2E6990C2F6FC60A7 CRC64;


  Query Match          26.5%;  Score 96;  DB 1;  Length 216;
  Best Local Similarity   30.6%;  Pred. No. 0.00017;
  Matches   19;  Conservative   10;  Mismatches   21;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSECLQCMNTSTSYISKTLFEITVPLS-----QGPKPVTISFANHTSCRCMSKL 55
           || |||  |||:|:          :: :|: ::     |      :|| |: | | |
Db      82 RCAGCCGDESLECVPVE      - VYNVTMEIAKTEFRQSQHIAHMSLLGASSKCLKEFKA 134

Qy      56 DV 57
           ||
Db     135 DV 136


RESULT  14
PLGF_HUMAN
ID   PLGF_HUMAN     STANDARD;      PRT:   170 AA.
AC   P49763;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20 AUG 2001 (Rel. 40, Last annotation update)
DE   PLACENTA GROWTH FACTOR PRECURSOR (PLGF-1/PLGF-2).
GN   PGF OR PLGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A. (PLGF-1).
RC   TISSUE=Placenta;
RX   MEDLINE=92021681; PubMed=1924389;
RA   Maglione D., Guerriero G., Viglietto G., Delli-Bovi P., Persico M.G.;
RT   "Isolation of a human placenta cDNA coding for a protein related to
RT   the vascular permeability factor.";
RL   Proc. Natl. Acad. Sci. U.S.A. 88:9267-9271(1991).
RN   [2]
RP   SEQUENCE FROM N.A. (PLGF-2).
RC   TISSUE=Placenta;
RX   MEDLINE=94198032; PubMed=8148155;
RA   Hauser S., Weich H.A.;
RT   "A heparin-binding form of placenta growth factor (PlGF-2) is
RT   expressed in human umbilical vein endothelial cells and in
RT   placenta.";
RL   Growth Factors 9:259-268(1993).
RN   [3]
RP   SEQUENCE FROM N.A. (PLGF-2).
RX   MEDLINE=93205407; PubMed=7681160;
RA   Maglione D., Guerriero V., Viglietto G., Ferraro M.G., Aprelikova O.,
RA   Alitalo K., del Vecchio S., Lei K.-J., Chou J.Y., Persico M.G.;
RT   "Two alternative mRNAs coding for the angiogenic factor, placenta
RT   growth factor (PlGF), are transcribed from a single gene of
RT   chromosome 14.";
RL   Oncogene 8:925-931(1993).
RN   [4]
RP   CHARACTERIZATION, AND SEQUENCE OF 19-24.
RX   MEDLINE=95014370; PubMed=7929268;
RA   Park J.E., Chen H.H., Winer J., Houck K.A., Ferrara N.;
RT   "Placenta growth factor. Potentiation of vascular endothelial growth
RT   factor bioactivity, in vitro and in vivo, and high affinity binding
RT   to Flt-1 but not to Flk-1/KDR.";
RL   J. Biol. Chem. 269:25646-25654(1994).
CC    !  FUNCTION: GROWTH FACTOR OF UNKNOWN FUNCTION. BINDS TO RECEPTOR
CC       VEGFR-1 (FLT1). THE LONGER FORM (PLGF-2) CAN ALSO BIND HEPARIN. IT
CC       IS ABLE TO POTENTIATE THE ACTION OF LOW LEVELS OF VEGF.
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED.
CC   -!- SUBCELLULAR LOCATION: BOTH FORMS ARE SECRETED BUT THE LONGER FORM
CC       APPEARS TO REMAIN CELL ATTACHED UNLESS RELEASED BY HEPARIN.
CC    !  ALTERNATIVE PRODUCTS: 2 ISOFORMS, PLGF-1 AND PLGF-2 (SHOWN HERE);
CC       ARE PRODUCED BY ALTERNATIVE SPLICING. PLGF-1 DIFFERS FROM PLGF-2
CC       IN LACKING A 21 RESIDUES SEGMENT IN THE C-TERMINAL SECTION WHICH
CC       ACTS AS A CELL RETENTION SIGNAL.
CC    !  TISSUE SPECIFICITY: WHILE BOTH FORMS ARE PRESENT IN MOST PLACENTAL
CC       TISSUES, THE LONGER FORM IS SPECIFIC TO EARLY (8 WEEK) PLACENTA
CC       AND ONLY THE SHORTER FORM IS FOUND IN THE COLON AND MAMMARY
CC       CARCINOMAS.
CC   -!- PTM: N-GLYCOSYLATED.
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
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CC   -----------------------------------------------------------------------
DR   EMBL; X54936; CAA38698.1; -.
DR   EMBL; A18411; CAA01393.1; -.
DR   EMBL; S72960; AAB30462.2; -.
DR   HSSP; P15692; 1VPF.
DR   MIM; 601121; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal; Alternative splicing;
KW   Heparin-binding.
FT   SIGNAL        1     18
FT   CHAIN        19    170       PLACENTA GROWTH FACTOR.
FT   DISULFID     52     94       BY SIMILARITY.
FT   DISULFID     83    128       BY SIMILARITY.
FT   DISULFID     87    130       BY SIMILARITY.
FT   DISULFID     77     77       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     86     86       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     33     33       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD    101    101       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   VARSPLIC    142    162       MISSING (IN ISOFORM PLGF-1).
FT   CONFLICT     91     91       D -> N (IN REF. 1).
SQ   SEQUENCE   170 AA;  19325 MW;  E47639AC59C0963F CRC64;

  Query Match             25.7%;  Score 93;  DB 1;  Length 170;
  Best Local Similarity   34.0%;  Pred. No. 0.0003;
  Matches   18;  Conservative    9;  Mismatches   20;  Indels    6;  Gaps    2;

Qy          1 RCGGCCNEEGLQCMNISIYLSKILEEIIVPLSQGEKP   VIISFANHISCRC 51
                || |||  | | |:    |: ::  | :|       | :|  | ::|: |  | |
Db         82 RCTGCCGDEDLHCVPVETANVTMQLLKI      RSGDRPSYVELTFSQHVRCEC 130

RESULT 15
PLGF_MOUSE
ID   PLGF_MOUSE     STANDARD;      PRT;   158 AA.
AC   P49764;
DT   01-OCT-1996 (Rel. 34, Created)
DT   01-OCT-1996 (Rel. 34, Last sequence update)
DT   20-AUG-2001 (Rel. 40, Last annotation update)
DE   PLACENTA GROWTH FACTOR PRECURSOR (PLGF).
GN   PGF OR PLGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=Heart;
RX   MEDLINE=97059399; PubMed=8903720;
RA   Dipalma T., Tucci M., Russo G., Maglione D., Lago C.T., Romano A.,
RA   Saccone S., della Valle G., de Gregorio L., Dragani T.A.,
RA   Viglietto G., Persico M.G.;
RT   "The placenta growth factor gene of the mouse.";
RL   Mamm. Genome 7:6-12(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   STRAIN=NIH SWISS;
RX   MEDLINE=98065081; PubMed=9401819;
RA   Achen M.G., Gad J.M., Stacker S.A., Wilks A.F.;
RT   "Placenta growth factor and vascular endothelial growth factor are
RT   co-expressed during early embryonic development.";
RL   Growth Factors 15:69-80(1997).
CC   -!- FUNCTION: GROWTH FACTOR ACTIVE IN ANGIOGENESIS, AND ENDOTHELIAL
CC       CELL GROWTH (BY SIMILARITY).
CC   -!- SUBUNIT: HOMODIMER; DISULFIDE-LINKED (BY SIMILARITY).
CC   -!- SIMILARITY: BELONGS TO THE PDGF/VEGF FAMILY OF GROWTH FACTORS.
CC   -----------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   -----------------------------------------------------------------------
DR   EMBL; X80171; CAA56453.1; -.
DR   EMBL; X96793; CAA65587.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:105095; Pgf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Mitogen; Growth factor; Glycoprotein; Signal.
FT   SIGNAL        1     18       BY SIMILARITY.
FT   CHAIN        19    158       PLACENTA GROWTH FACTOR.
FT   DISULFID     48     90       BY SIMILARITY.
FT   DISULFID     79    125       BY SIMILARITY.
FT   DISULFID     83    127       BY SIMILARITY.
FT   DISULFID     73     73       INTERCHAIN (BY SIMILARITY).
FT   DISULFID     82     82       INTERCHAIN (BY SIMILARITY).
FT   CARBOHYD     29     29       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD     30     30       N-LINKED (GLCNAC. . .) (POTENTIAL).
FT   CARBOHYD     97     97       N-LINKED (GLCNAC. . .) (POTENTIAL).
SQ   SEQUENCE   158 AA;  17876 MW;  F16128BEA0790438 CRC64;

  Query Match             23.9%;  Score 86.5;  DB 1;  Length 158;
  Best Local Similarity   31.6%;  Pred. No. 0.0017;
  Matches   18;  Conservative   12;  Mismatches   24;  Indels    3;  Gaps    2;

Qy          1 RCGGCCNEEGLQCMNISIYLSKILEEIIVPLSQGEK-PVIISFANHISCRCMSKLD 56
                || |||  ||| |:    |: ::   : :|  | :: |     | ::|:     | |    |:
Db         78 RCSGCCGDEGLHCVPIKTANITMQILKI--PPNRDPHFYVEMTFSQDVLCECRPILE 132

Search completed: December 26, 2001, 11:44:01
Job time: 864 sec
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OM protein - protein search, using sw model

Run on:          December 26, 2001, 11:14:07 ; Search time 139.34 Seconds
                                        (without alignments)
                                        97.670 Million cell updates/sec

Title:           US-09-534-376A-8_COPY_161_227
Perfect score:   362
Sequence:        1 RCGGCCNSEGLQCMNISTSY..........SCRCMSKLDVYRQVHSIIRR 67

Scoring table:   BLOSUM62
                 Gapop 10.0 , Gapext 0.5

Searched:        473505 seqs, 146272429 residues

Total number of hits satisfying chosen parameters:      473505

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
                 Maximum Match 100%
                 Listing first 45 summaries

Database :       SPTREMBL_17:*
                1:  sp_archea:*
                2:  sp_bacteria:*
                3:  sp_fungi:*
                4:  sp_human:*
                5:  sp_invertebrate:*
                6:  sp_mammal:*
                7:  sp_mhc:*
                8:  sp_organelle:*
                9:  sp_phage:*
                10:  sp_plant:*
                11:  sp_rodent:*
                12:  sp_virus:*
                13:  sp_vertebrate:*
                14:  sp_unclassified:*

     Pred. No. is the number of results predicted by chance to have a
     score greater than or equal to the score of the result being printed,
     and is derived by analysis of the total score distribution.
```

SUMMARIES

Result No.	Score	% Query Match	Length	DB	ID	Description
1	358	98.9	126	11	O35757	O35757 rattus norv
2	356	98.3	420	6	Q9XS50	Q9xs50 bos taurus
3	345	95.3	418	13	O57352	O57352 coturnix co
4	215	59.4	358	11	P97946	P97946 mus musculu
5	211	58.3	354	4	O43915	O43915 homo sapien
6	209	57.7	326	11	O35251	O35251 rattus norv
7	126	34.8	171	4	Q9H1W8	Q9h1w8 homo sapien
8	126	34.8	209	4	O60720	O60720 homo sapien
9	126	34.8	232	4	Q9H1W9	Q9h1w9 homo sapien
10	126	34.8	254	4	Q16889	Q16889 homo sapien
11	124	34.3	214	6	Q9MYV3	Q9myv3 canis famil
12	123	34.0	147	4	Q9UH58	Q9uh58 homo sapien
13	123	34.0	174	4	Q9UL23	Q9ul23 homo sapien
14	123	34.0	208	6	Q9XSF4	Q9xsf4 canis famil
15	123	34.0	214	6	Q9XSF5	Q9xsf5 canis famil
16	120	33.1	190	6	Q9XSF3	Q9xsf3 canis famil
17	119	32.9	124	6	Q9GK00	Q9gk00 callithrix
18	117	32.3	190	6	Q9GL52	Q9gl52 sus scrofa
19	117	32.3	190	6	Q9GKR0	Q9gkr0 equus cabal
20	114	31.5	78	6	Q9NIS2	Q9nis2 capreolus c
21	114	31.5	123	6	Q9NIS1	Q9nis1 capreolus c
22	114	31.5	126	6	Q9BDP7	Q9bdp7 macaca mula
23	114	31.5	144	13	O73822	O73822 brachydanio
24	114	31.5	188	13	O73682	O73682 brachydanio
25	113	31.2	191	4	O75875	O75875 homo sapien
26	112	30.9	140	11	Q9QX39	Q9qx39 spalax leuc
27	109	30.1	119	6	Q9MZP1	Q9mzp1 ovis aries
28	109	30.1	190	6	O77643	O77643 ovis aries
29	106	29.3	148	13	O42571	O42571 xenopus lae
30	106	29.3	170	11	Q9JKX7	Q9jkx7 rattus norv
31	106	29.3	194	13	O42572	O42572 xenopus lae
32	106	29.3	214	11	Q9QXG7	Q9qxg7 rattus norv
33	104	28.7	146	11	Q9QXG6	Q9qxg6 rattus norv
34	103	28.5	75	6	O18843	O18843 oryctolagus
35	103	28.5	142	11	Q9ERL6	Q9erl6 mesocricetu
36	103	28.5	190	11	Q99PS1	Q99ps1 mesocricetu
37	101	27.9	132	12	Q9YMF3	Q9ymf3 orf virus.
38	97.5	26.9	188	6	Q9XS48	Q9xs48 bos taurus
39	97.5	26.9	193	6	Q9XS49	Q9xs49 bos taurus
40	97.5	26.9	207	4	Q16528	Q16528 homo sapien
41	97.5	26.9	207	11	Q64290	Q64290 mus musculu
42	94	26.0	149	4	Q9Y6S8	Q9y6s8 homo sapien
43	94	26.0	170	4	Q9BV78	Q9bv78 homo sapien
44	91.5	25.3	116	11	O35485	O35485 rattus norv
45	91.5	25.3	150	11	O54881	O54881 rattus norv

ALIGNMENTS

```
RESULT   1
O35757
ID   O35757       PRELIMINARY;      PRT;   126 AA.
AC   O35757;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR-C (FRAGMENT).
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=SPRAGUE DAWLEY; TISSUE=LUNG;
RA   Mandriota S.J., Pepper M.S.;
RL   Submitted (JUN-1997) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF010302; AAB63248.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1      1
FT   NON_TER     126    126
SQ   SEQUENCE   126 AA;  13977 MW;  8F365AFBC4E037B0 CRC64;

  Query Match             98.9%;  Score 358;  DB 11;  Length 126;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-38;
  Matches   66;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy          1 RCGGCCNSEGLQCMNISTSYLSKILLFIIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
                |||||||||||||||||| |||||||||||||||||||||||||||||||||||||||||
Db          5 RCGGCCNSEGLQCMNISTGYLSKILLFIIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 64

Qy         61 VHSIIRR 67
              |||||||
Db         65 VHSIIRR 71
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RESULT   2
Q9XS50
ID   Q9XS50       PRELIMINARY;       PRT;   420 AA.
AC   Q9XS50;
DT   01-NOV-1999 (TrEMBLrel. 12, Created)
DT   01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
OS   Bos taurus (Bovine).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
OC   Bovidae; Bovinae; Bos.
OX   NCBI_TaxID=9913;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Liu X., Yonekura H., Yamagishi S., Yamamoto Y., Yamamoto H.;
RT   "Structure and expression of bovine VEGF family.";
RL   Submitted (MAY-1997) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AB004275; BAA77687.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     20       POTENTIAL.
FT   CHAIN        21    420       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   420 AA;  46681 MW;  5BBAB4417A3C8E2D CRC64;


  Query Match             98.8%;  Score 456;  DB 6;  Length 420;
  Best Local Similarity   98.5%;  Pred. No. 2e-47;
  Matches   66;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           ||||||||||| |||||||||||||||||||||||||||||||||||||||||||||||||
Db     162 RCGGCCNSEQQQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 221

Qy      61 VHSIIRR 67
           |||||||
Db     222 VHSIIRR 228


RESULT   3
O57352
ID   O57352       PRELIMINARY;       PRT;   418 AA.
AC   O57352;
DT   01-JUN-1998 (TrEMBLrel. 06, Created)
DT   01-JUN-1998 (TrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR C PRECURSOR.
GN   VEGF-C.
OS   Coturnix coturnix japonica (Japanese quail).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
OC   Coturnix.
OX   NCBI_TaxID=93934;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98167900; PubMed=9445294;
RA   Eichmann A., Corbel C., Jaffredo T., Breant V., Joukov V., Kumar V.,
RA   Alitalo K., Le Douarin N.M.;
RT   "Avian VEGF-C: cloning, embryonic expression pattern and stimulation
RT   of the differentiation of VEGFR2 expressing endothelial cell
RT   precursors.";
RL   Development 125:743-752(1998).
DR   EMBL; Y15847; CAA75799.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR002400; GF_cysknot.
DR   InterPro; IPR000476; Glyco_hormone.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   PRINTS; PR00438; GFCYSKNOT.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00067; GHA; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     31       POTENTIAL.
FT   CHAIN        111   418       VASCULAR ENDOTHELIAL GROWTH FACTOR C.
SQ   SEQUENCE   418 AA;  46839 MW;  0998FCC7915188F2B CRC64;


  Query Match             95.8%;  Score 445;  DB 13;  Length 418;
  Best Local Similarity   92.5%;  Pred. No. 5e-46;
  Matches   62;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||||||||| ||:|:|||||||||| ||||||:|||||||||||||||||||||||
Db     160 RCGGCCNSEGLQCMNISTNYISKTLFEITVPLSHGPKPVTVSFANHTSCRCMSKLDVYRQ 219

Qy      61 VHSIIRR 67
           |||||||
Db     220 VHSIIRR 226


RESULT   4
P97946
ID   P97946       PRELIMINARY;       PRT;   458 AA.
AC   P97946;
DT   01-MAY-1997 (TrEMBLrel. 03, Created)
DT   01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR D (C-FOS INDUCED GROWTH FACTOR).
GN   VEGF-D OR FIGF.
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciuromorpha; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN C57BL/6J;
RX   MEDLINE=97040294; PubMed=8876195;
RA   Orlandini M., Marconcini L., Ferruzzi R., Oliviero S.;
RT   "Identification of a c-fos-induced gene that is related to the
RT   platelet-derived growth factor/vascular endothelial growth factor
RT   family.";
RL   Proc. Natl. Acad. Sci. U.S.A. 93:11675-11680(1996).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LUNG;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
DR   EMBL; X99572; CAA67892.1; -.
DR   EMBL; D89628; BAA14002.1; -.
DR   HSSP; P15692; 1VPF.
DR   MGD; MGI:108037; Figf.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   458 AA;  40908 MW;  6646B17FBF07037C CRC64;


  Query Match             59.4%;  Score 215;  DB 11;  Length 458;
  Best Local Similarity   59.7%;  Pred. No. 1.8e-19;
  Matches   40;  Conservative    9;  Mismatches   16;  Indels    2;  Gaps    1;
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Qy       1 RCGGCCNSPGILCMNTSISYLSKILPEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  ||: |||||||||:|| ||||:|||:  |: | :  |||| |:|:      |
Db     146 RCGGCCNEEGVMCMNTSISYISKQLPEISVPLISVPELVPVKIANHTGCKCLPTGP--RH 203

Qy      61 VHSIIRR 67
             :|||||
Db     204 PYSIIRR 210


RESULT   5
O43915
ID   O43915      PRELIMINARY;      PRT;   454 AA.
AC   O43915;
DT   01-JUN-1998 (IrEMBLrel. 06, Created)
DT   01-JUN-1998 (IrEMBLrel. 06, Last sequence update)
DT   01-JUN-2001 (IrEMBLrel. 17, Last annotation update)
DE   GROWTH FACTOR FIGF.
GN   FIGF OR VEGF-D.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98140120; PubMed=9479464;
RA   Rocchigiani M., Lestingi M., Luddi A., Orlandini M., Franco B.,
RA   Rossi F., Ballabio A., Zuffardi O., Oliviero S.;
RT   "Human FIGF: cloning, gene structure, and mapping to chromosome Xp22.1
RT   between the PIGA and the GRPR genes.";
RL   Genomics 47:207-216(1998).
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LUNG;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
RN   [3]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=98118549; PubMed=9435229;
RA   Achen M.G., Jeltsch M., Kukk E., Makinen T., Vitali A., Wilks A.F.,
RA   Alitalo K., Stacker S.A.;
RT   "Vascular endothelial growth factor D (VEGF-D) is a ligand for the
RT   tyrosine kinases VEGF receptor 2 (Flk1) and VEGF receptor 3 (Flt4).";
RL   Proc. Natl. Acad. Sci. U.S.A. 95:548-553(1998).
DR   EMBL; Y12864; CAA73371.1; -.
DR   EMBL; Y12865; CAA73371.1; JOINED.
DR   EMBL; Y12866; CAA73371.1; JOINED.
DR   EMBL; Y12867; CAA73371.1; JOINED.
DR   EMBL; Y12868; CAA73371.1; JOINED.
DR   EMBL; Y12869; CAA73371.1; JOINED.
DR   EMBL; Y12870; CAA73371.1; JOINED.
DR   EMBL; D89630; BAA24264.1; -.
DR   EMBL; AJ000185; CAA03942.1; -.
DR   EMBL; Y12863; CAA73370.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   454 AA;  49444 MW;  2048D769D74517AE CRC64;


  Query Match             58.4%;  Score 211;  DB 4;  Length 454;
  Best Local Similarity   59.7%;  Pred. No. 5.8e-19;
  Matches   40;  Conservative    8;  Mismatches   17;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGILQCMNTSTSYLSKILPEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  | |  |||||||||:|| ||||:|||:  |: | :  |||| |:|:      |
Db     141 RCGGCCNEESLICMNTSTSYISKQLPEISVPLTSVPELVPVKVANHTGCKCLPTAP--RH 198

Qy      61 VHSIIRR 67
             :|||||
Db     199 PYSIIRR 205


RESULT   6
O35251
ID   O35251      PRELIMINARY;      PRT;   426 AA.
AC   O35251;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR D.
GN   VEGF-D.
OS   Rattus norvegicus (Rat).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX   NCBI_TaxID=10116;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   STRAIN=SPRAGUE DAWLEY;
RX   MEDLINE=97349118; PubMed=9205122;
RA   Yamada Y., Nezu J., Shimane M., Hirata Y.;
RT   "Molecular cloning of a novel vascular endothelial growth factor,
RT   VEGF-D.";
RL   Genomics 42:483-488(1997).
DR   EMBL; AF014827; AAB66557.1; -.
DR   HSSP; P15692; 1VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   326 AA;  37112 MW;  1261AFA3735960D0 CRC64;


  Query Match             57.7%;  Score 209;  DB 11;  Length 326;
  Best Local Similarity   58.2%;  Pred. No. 9.6e-19;
  Matches   39;  Conservative    9;  Mismatches   17;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGILQCMNTSTSYLSKILPEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  | |  |||||||||:|| ||||:|||:  |: | :  |||| |:|:      |
Db     146 RCGGCCNEESVMCMNTSISYISKQLPEISVPLISVPELVPVKIANHTGCKCLPTGP--RH 203

Qy      61 VHSIIRR 67
             :|||||
Db     204 PYSIIRR 210


RESULT   7
Q9H1W8
ID   Q9H1W8      PRELIMINARY;      PRT;   171 AA.
AC   Q9H1W8;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   DJ261G23.6.5 (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AL136121; CAC19517.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
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DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   171 AA;  20064 MW;  D02ECA735EF6E9F8 CRC64;


  Query Match             34.8%;  Score 126;  DB 4;  Length 171;
  Best Local Similarity   39.4%;  Pred. No. 2.1e-08;
  Matches   26;  Conservative    7;  Mismatches   31;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |     ||     :|| |  | | | | ||
Db      82 RCGGCCNDEGLECVPTEESNITMQIMRIKP-HQGQHIGEMSFLQHNKCECRPKKDRARQ 139

Qy      61 VHSIIR 66
             :|
Db     140 EKKSVR 145


RESULT   8
Q60720
ID   Q60720      PRELIMINARY;      PRT;   209 AA.
AC   Q60720;
DT   01-AUG-1998 (TrEMBLrel. 07, Created)
DT   01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VEGF183 PROTEIN PRECURSOR (VASCULAR ENDOTHELIAL GROWTH FACTOR 183)
DE   (DJ261G23.6.6) (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=KIDNEY;
RX   MEDLINE=99096474; PubMed=9878851;
RA   Lei J., Jiang A., Pei D.;
RT   "Identification and characterization of a new splicing variant of
RT   vascular endothelial growth factor: VEGF184.";
RL   Biochim. Biophys. Acta, Gene Struct. Expr. 1443:400-406(1998).
RN   [2]
RP   SEQUENCE OF 114-209 FROM N.A.
RC   TISSUE=RETINA;
RA   Jingjing L., Roque R.S.;
RL   Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
RN   [3]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AJ010438; CAA09179.1; -.
DR   EMBL; AF062645; AAC16730.1; -.
DR   EMBL; AL136131; CAC19514.1; -.
DR   BSSD; PI5692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    209       VEGF183 PROTEIN.
SQ   SEQUENCE   209 AA;  24422 MW;  F01CCEACD945D6CA CRC64;


  Query Match             34.8%;  Score 126;  DB 4;  Length 209;
  Best Local Similarity   39.4%;  Pred. No. 2.5e-08;
  Matches   26;  Conservative    7;  Mismatches   31;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |     ||     :|| |  | | | | ||
Db      82 RCGGCCNDEGLECVPTEESNITMQIMRIKP-HQGQHIGEMSFLQHNKCECRPKKDRARQ 139

Qy      61 VHSIIR 66
             :|
Db     140 EKKSVR 145


RESULT   9
Q9H1W9
ID   Q9H1W9      PRELIMINARY;      PRT;   232 AA.
AC   Q9H1W9;
DT   01-MAR-2001 (TrEMBLrel. 16, Created)
DT   01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   DJ261G23.6.3 (VASCULAR ENDOTHELIAL GROWTH FACTOR).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AL136131; CAC19512.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   232 AA;  27042 MW;  FB49F364446E4D01 CRC64;


  Query Match             34.8%;  Score 126;  DB 4;  Length 232;
  Best Local Similarity   39.4%;  Pred. No. 2.8e-08;
  Matches   26;  Conservative    7;  Mismatches   31;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |     ||     :|| |  | | | | ||
Db      82 RCGGCCNDEGLECVPTEESNITMQIMRIKP-HQGQHIGEMSFLQHNKCECRPKKDRARQ 139

Qy      61 VHSIIR 66
             :|
Db     140 EKKSVR 145


RESULT  10
Q16889
ID   Q16889      PRELIMINARY;      PRT;   254 AA.
AC   Q16889;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1998 (TrEMBLrel. 08, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR (FRAGMENT).
GN   VEGF 206.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=92168017; PubMed=1791831;
RA   Houck K.A., Ferrara N., Winer J., Cachianes G., Li B., Leung D.W.;
RT   "The vascular endothelial growth factor family: identification of a
RT   fourth molecular species and characterization of alternative splicing
RT   of RNA.";
RL   Mol. Endocrinol. 5:1806-1814(1991).
DR   EMBL; S85192; AAC63102.1; -.
DR   EMBL; S85224; AAC63101.1; -.
DR   EMBL; S85199; AAC63101.1; JOINED.
DR   EMBL; S85201; AAC63101.1; JOINED.
DR   EMBL; S85219; AAC63101.1; JOINED.
DR   EMBL; S85222; AAC63101.1; JOINED.
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DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
FT   NON_TER       1      1
SQ   SEQUENCE   254 AA;  29461 MW;  069DFE9B9723DBA8 CRC64;


  Query Match             44.8%;  Score 126;  DB 4;  Length 254;
  Best Local Similarity   39.4%;  Pred. No. 3.1e-08;
  Matches   26;  Conservative    7;  Mismatches   41;  Indels    2;  Gaps    1;

Qy       1 RCGGPCNSEGLQCMNTSISTLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |     ||     :|| |  | | |  | |  ||
Db     104 RQGGPCNDEGLECVPTEESNITMQIMRIKP--HQGQHIGEMSFLQHNKCECRPKKDRARQ 161

Qy      61 VHSIIR 66
            :|
Db     162 EKESVR 167


RESULT  11
Q9MYV3
ID   Q9MYV3      PRELIMINARY;      PRT;   214 AA.
AC   Q9MYV3;
DT   01-OCT-2000 (TrEMBLrel. 15, Created)
DT   01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 188 PRECURSOR.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RX   MEDLINE=20125516; PubMed=11066021;
RA   Scheidegger P., Weighthofer W., Suarez S., Kaser-Hotz B., Steiner R.,
RA   Ballmer-Hofer K., Iussi R.;
RT   "Vascular endothelial growth factor (VEGF) and its receptors in tumor-
RT   bearing dogs.";
RL   Biol. Chem. 380:1449-1454(1999).
DR   EMBL; AJ133758; CAB82426.1; -.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
FT   CHAIN        27    214       VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
SQ   SEQUENCE   214 AA;  25175 MW;  0AC980A158C44827 CRC64;


  Query Match             44.8%;  Score 124;  DB 6;  Length 214;
  Best Local Similarity   39.4%;  Pred. No. 4.7e-08;
  Matches   28;  Conservative    6;  Mismatches   25;  Indels   12;  Gaps    2;

Qy       1 RCGGPCNSEGLQCMNTSESYISKTLFEITVPL-    SQGPKPVTISFANHTSCRCMSKI 55
           |||||||  |||:|: |  |  | ||: :     |     :|| |: | | |  |
Db      61 RQGGGCNDEGLECVPTEE-S-   -ENITMQIMRIKPHQGQHIGEMSFLQHSKCECRPKK 113

Qy      56 DVYRQVHSIIR 66
           :  ||   ||
Db     114 DRARQEKKSIR 124


RESULT  12
Q9UH58
ID   Q9UH58      PRELIMINARY;      PRT;   147 AA.
AC   Q9UH58;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR ISOFORM 121 PRECURSOR
DE   (DJ261G23.6.2).
GN   VEGF.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Sato J.D., Whitney R.G.;
RT   "Human cDNA for vascular endothelial growth factor isoform VEGF121.";
RL   Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Williams S.;
RL   Submitted (DEC-2000) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF214570; AAF19659.1; -.
DR   EMBL; AL136131; CAC19515.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
KW   Signal.
FT   SIGNAL        1     26       POTENTIAL.
SQ   SEQUENCE   147 AA;  17219 MW;  DDF4D699424986D6 CRC64;


  Query Match             44.8%;  Score 123;  DB 4;  Length 147;
  Best Local Similarity   41.7%;  Pred. No. 4.3e-08;
  Matches   25;  Conservative    6;  Mismatches   27;  Indels    2;  Gaps    1;

Qy       1 RCGGPCNSEGLQCMNTSISTLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           |||||||  |||:|: |  | ::  :  |     ||     :|| |  | | |  | |  ||
Db      82 RQGGPCNDEGLECVPTEESNITMQIMRIKP--HQGQHIGEMSFLQHNKCECRPKKDRARQ 139


RESULT  13
Q9UL23
ID   Q9UL23      PRELIMINARY;      PRT;   174 AA.
AC   Q9UL23;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR PERMEABILITY FACTOR 148.
OS   Homo sapiens (Human).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX   NCBI_TaxID=9606;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=GLOMERULI;
RX   MEDLINE=99394945; PubMed=10464055;
RA   Whittle C.J., Gillespie K.M., Harrison R., Mathieson P.M.,
RA   Harper S.J.;
RT   "Heterogeneous vascular endothelial growth factor (VEGF) isoform mRNA
RT   and receptor mRNA expression in human glomeruli, and the
RT   identification of VEGF148 mRNA, a novel truncated splice variant.";
RL   Clin. Sci. 97:403-412(1999).
DR   EMBL; AF091352; AAD55345.1; -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS00249; PDGF_1; 1.
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DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   174 AA;  20218 MW;  AE88400CA7757644 CRC64;


  Query Match             34.0%;  Score 123;  DB 4;  Length 174;
  Best Local Similarity   41.7%;  Pred. No. 5.1e-08;
  Matches   25;  Conservative    4;  Mismatches   27;  Indels    2;  Gaps    1;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRCMSKLDVYRQ 60
           ||||||| |||:|: |  | ::  :  |     ||     :|| |  | | |  | |  ||
Db      82 RCGGCCNDEGLECVPTEESNIIMQIMRIKP  HQGQHIGEMSFLQHNKCECRPKKDRARQ 139


RESULT  14
Q9XSP4
ID   Q9XSP4       PRELIMINARY;      PRT;   208 AA.
AC   Q9XSP4;
DT   01-NOV-1999 (TrEMBLrel. 12, Created)
DT   01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 182.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Jinqjing L., Roque R.S.;
RL   Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF143249; AAD29684.1;  -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS60249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   208 AA;  24400 MW;  CFF7AC5911F5C2BBE CRC64;


  Query Match             34.0%;  Score 123;  DB 6;  Length 208;
  Best Local Similarity   38.0%;  Pred. No. 6.1e-08;
  Matches   27;  Conservative    7;  Mismatches   25;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL     SQGPKPVTISFANHTSCRCMSKL 55
           ||||||| |||:|: |          | ||: :      ||     :|| |  | | |  |
Db      81 RCGGCCNDEGLECVPTEE        ENIIMQIMKIKPHQGQHIGEMSFLQHSKCECRPKK 133

Qy      56 DVYRQVHSITR 66
           |  ||    :|
Db     134 DRARQEKKSVR 144


RESULT  15
Q9XSP5
ID   Q9XSP5       PRELIMINARY;      PRT;   214 AA.
AC   Q9XSP5;
DT   01-NOV-1999 (TrEMBLrel. 12, Created)
DT   01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT   01-JUN-2001 (TrEMBLrel. 17, Last annotation update)
DE   VASCULAR ENDOTHELIAL GROWTH FACTOR 188.
GN   VEGF.
OS   Canis familiaris (Dog).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX   NCBI_TaxID=9615;
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=HEART;
RA   Jinqjing L., Roque R.S.;
RL   Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF143250; AAD29684.1;  -.
DR   HSSP; P15692; 2VPF.
DR   InterPro; IPR000072; PDGF.
DR   Pfam; PF00341; PDGF; 1.
DR   ProDom; PD001629; PDGF; 1.
DR   SMART; SM00141; PDGF; 1.
DR   PROSITE; PS60249; PDGF_1; 1.
DR   PROSITE; PS50278; PDGF_2; 1.
SQ   SEQUENCE   214 AA;  25151 MW;  2269981AFB6C0058 CRC64;


  Query Match             34.0%;  Score 123;  DB 6;  Length 214;
  Best Local Similarity   38.0%;  Pred. No. 6.2e-08;
  Matches   27;  Conservative    7;  Mismatches   25;  Indels   12;  Gaps    2;

Qy       1 RCGGCCNSEGLQCMNTSTSYLSKTLFEITVPL     SQGPKPVTISFANHTSCRCMSKL 55
           ||||||| |||:|: |          | ||: :      ||     :|| |  | | |  |
Db      81 RCGGCCNDEGLECVPTEE        ENIIMQIMKIKPHQGQHIGEMSFLQHSKCECRPKK 133

Qy      56 DVYRQVHSITR 66
           |  ||    :|
Db     134 DRARQEKKSVR 144


Search completed: December 26, 2001, 11:43:07
Job time: 895 sec
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GenCore version 4.5

/M protein protein search, using sw model

Run on: December 26, 2001, 11:28:08 ; Search time 102.82 Seconds
(without alignments)
141.202 Million cell updates/sec

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Perfect score: 1053
Sequence: 1 FESGLDLSDAFPDAGFATAY.....SCRCMSKLDVYPQVHSIIRR 196

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 522463 seqs, 74073290 residues

Total number of hits satisfying chosen parameters: 522463

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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22: /SIDS2/gcgdata/geneseq/geneseqp/AA2001.DAT:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	1053	100.0	399	20	AAW86237	Human VEGF-C full
2	1053	100.0	419	18	AAW17837	Human foetal liver
3	1053	100.0	419	18	AAW00932	Human Flt4 recepto
4	1053	100.0	419	18	AAW11478	Human vascular end
5	1053	100.0	419	19	AAW75740	Human vascular end
6	1053	100.0	419	20	AAY40518	Vascular endotheli
7	1053	100.0	419	20	AAY22320	Full length human
8	1053	100.0	419	20	AAW86203	Human vascular end
9	1053	100.0	419	21	AAB10648	Human VEGC protein
10	1053	100.0	419	21	AAB29048	Human VEGF-C prote
11	1053	100.0	419	21	AAY97144	Vascular endotheli
12	1053	100.0	419	21	AAY70749	Human prepro vascu
13	1053	100.0	419	21	AAY70982	Human vascular end
14	1053	100.0	419	22	AAY97570	Human VEGF-B prote
15	1053	100.0	419	22	AAB87605	Human VEGF-C. Hom
16	1044	99.1	419	18	AAW13833	Human vascular end
17	1042	99.0	419	19	AAW75751	Vascular endotheli
18	981	88.4	415	19	AAW75742	Mouse vascular end
19	926	87.9	415	18	AAW00933	Mouse Flt4 recepto
20	893	84.8	418	18	AAW00934	Quail Flt4 recepto
21	893	84.8	418	19	AAW75743	Quail vascular end
22	869	82.5	350	20	AAY30519	A truncated vascul
23	869	82.5	350	20	AAY22321	Truncated human VE
24	869	82.5	350	21	AAY97145	Truncated vascular
25	869	82.5	350	22	AAY97577	Human VEGF 2 prote
26	864	82.1	350	16	AAB82686	Vascular endotheli
27	683	64.9	318	20	AAY09284	Human growth facto
28	631	59.9	307	20	AAW86222	Human VEGF-C trunc
29	618	58.7	113	20	AAY08285	Human growth facto
30	600	57.0	302	20	AAW86223	Human VEGF-C trunc
31	579	55.0	297	20	AAW86224	Human VEGF-C trunc
32	546	51.9	292	20	AAW86225	Human VEGF-C trunc
33	489	46.4	321	19	AAW53243	Mus musculus vascu
34	489	46.4	337	20	AAY08286	Human growth facto
35	489	46.4	358	19	AAW53242	Mus musculus vascu
36	489	46.4	358	19	AAW44295	Mouse vascular end
37	488	46.3	358	18	AAW14992	Murine c-Fos induc
38	485	46.1	326	19	AAW44296	Rat vascular endot
39	480	45.6	178	20	AAY08287	Human growth facto
40	478	45.4	325	19	AAW53240	Homo sapiens vascu
41	478	45.4	325	22	AAY97572	Human VEGF-D prote
42	478	45.4	354	19	AAW49036	Human zvegf2 growt
43	478	45.4	354	19	AAW53241	Homo sapiens vascu
44	478	45.4	354	19	AAW11963	Mouse vascular end
45	478	45.4	354	21	AAB10649	Human VEGD protein

ALIGNMENTS

RESULT 1
AAW86237
ID AAW86237 standard; protein; 399 AA.
XX
AC AAW86237;
XX
DT 16-FEB-1999 (first entry)
XX
DE Human VEGF-C full length sequence.
XX
KW VEGF; VEP; vascular endothelial growth factor; VEGF-related protein;
KW recombinant; therapeutic; gene therapy; angiogenesis; cardiac ischaemia;
KW coronary; collateral vessel development; cell growth; migration; heart;
KW lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW wound healing; skin; vascular permeability.
XX
OS Homo sapiens.
XX
PN WO9849300-A2.
XX
PD 05-NOV-1998.
XX
PF 20-APR-1998; 98WO-US07801.
XX
PR 25-APR-1997; 97US-0842984.
XX
PA (COLL-) COLLATERAL THERAPEUTICS.
XX
PI Bohlen P;
XX
DR WPI; 1998-604426/01.
XX
PT New truncated vascular endothelial growth factor-related protein
PT subunits - lack part of the N-terminal sequence, used to stimulate

```
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Claim 5; Fig 2b; 113pp; English.
XX
CC   The invention relates to truncated VRP (vascular endothelial growth
CC   factor (VEGF) related protein) subunits that have at least one amino
CC   acid N terminal to the first Cys of the core sequence deleted. Host
CC   cells transformed or transfected with expression vectors containing
CC   nucleic acids encoding the truncated VRP subunits are used to produce
CC   the truncated proteins recombinantly. The truncated VRP subunits,
CC   optionally expressed from gene therapy vectors, have in vivo and in vitro
CC   angiogenic activity and are used to stimulate angiogenesis, particularly
CC   coronary collateral vessel development in cases of cardiac ischaemia; to
CC   stimulate endothelial cell growth and migration in vitro; to treat heart
CC   disease; to treat ischaemia (e.g.cardiac, chronic coronary or chronic
CC   lower limb ischaemia; stroke and peripheral vascular disease); to promote
CC   healing of wounds (of skin or intestines), and to increase vascular
CC   permeability. Sequences AAW86234 to AAW86239 represent full length VRP
CC   sequences from which the truncated fragments are created.
XX
SQ   Sequence   399 AA;


  Query Match             100.0%;  Score 1053;  DB 20;  Length 399;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      12 tesqldlsdaepdagеatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkgqwq 71

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      72 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 131

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     132 fkppcvsvyrcggccnsegLqcmntstsylsktlfeitvplsqgpkpvtistanhtscrc 191

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     192 mskldvyrqvhsiirr 207


RESULT   2
AAW17837
ID   AAW17837 standard; Protein; 419 AA.
XX
AC   AAW17837;
XX
DT   18-JAN-1998  (first entry)
XX
DE   Human foetal liver kinase A binding protein flk-lbp.
XX
KW   Foetal liver kinase 1 binding protein; human; flk-lbp;
KW   receptor tyrosine kinase; vasculogenesis; angiogenesis;
KW   wound healing; tumour; therapy; antagonist; antibody.
XX
OS   Homo sapiens.
XX
FH   Key             Location/qualifiers
FT   Peptide          1..20
FT                    /label= Sig peptide
FT   Protein          21..419
FT                    /label= Mat protein
FT                    /note= "(Claim 10)"
FT   Peptide          21..35
FT                    /label= N terminal
FT                    /note= "(Claim 9)"
XX
PN   WO9711442-A1.
XX
PD   15-MAY-1997.
XX
PF   05-NOV-1996;   96WO-US17584.
XX
PR   08-NOV-1995;   95US-0554474.
XX
PA   (IMMV-) IMMUNEX CORP.
XX
PI   Lyman SD;
XX
DR   WPI; 1997-281043/25.
DR   N-PSDB; AAT68811.
XX
PT   DNA encoding a human foetal liver kinase 1 binding protein    used
PT   to treat conditions with insufficient protein, deliver agents to
PT   cells and identify antagonists to treat protein-mediated conditions
XX
PS   Claim 1; Page 40-32; 43pp; English.
XX
CC   This polypeptide comprises a human foetal liver kinase 1 binding
CC   protein (flk-lbp) (see AAW17837) that binds to the receptor tyrosine
CC   kinase flk-1 expressed on vascular endothelial and other cells.
CC   The mature flk1-bp can be secreted from host cells transformed with
CC   an expression vector including an isolated flk-lbp cDNA clone (see
CC   AAT68811). Flk-lbp can be used to isolate cells to which it binds,
CC   for use in studying the roles of such cells and of flk-1 in
CC   vasculogenesis and angiogenesis. Angiogenesis inhibition or
CC   increased vascularisation may be clinically desirable (e.g. to
CC   suppress solid tumour growth or in wound healing, respectively).
CC   The flk-lbp can be administered to treat conditions with defective
CC   or insufficient flk-1. Polypeptides may also act as carriers to
CC   deliver diagnostic/therapeutic agents to cells to which flk1-bp
CC   binds, to generate antibodies, and to identify flk-lbp antagonists
CC   useful for treating flk-lbp mediated conditions.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 18;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 tesqldlsdaepdagеatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkgqwq 91

Qy      61 HNREQANLNSKTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnsegLqcmntstsylsktlfeitvplsqgpkpvtistanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT   3
AAW00932
ID   AAW00932 standard; Protein; 419 AA.
XX
AC   AAW00932;
XX
DT   10-NOV-1997  (first entry)
XX
DE   Human Flt4 receptor tyrosine kinase ligand VEGF-C.
XX
KW   VEGF-C; Flt4; receptor tyrosine kinase; VEGFR-3; human;
KW   vascular endothelial growth factor receptor-3; ligand;
KW   angiogenesis; wound healing; lymph vessel; lymphangioma;
KW   cancer; metastasis; therapy; diagnosis; antibody; inhibitor.
XX
```

```
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..102
FT                   /label= Prepro_peptide
FT   Peptide         32..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 15)"
FT   Peptide         103..217
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 12)"
FT   Peptide         103..225
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 13)"
FT   Peptide         103..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 14)"
FT   Peptide         113..213
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 10)"
FT   Peptide         113..227
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 11)"
FT   Peptide         131..211
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 9)"
FT   Peptide         161..221
FT                   /note= "preferred active fragment of VEGF-C,
FT                   retaining Flt4 ligand activity (Claim 8)"
XX
PN   WO9705250-A2.
XX
PD   13-FEB-1997.
XX
PF   01-AUG-1996;    96WO-FI00427.
XX
PR   28-JUN-1996;    96US-0671574.
PR   01-AUG-1995;    95US-0510134.
PR   12-JAN-1996;    96US-0585809.
PR   14-FEB-1996;    96US-0601152.
XX
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI   Alitalo K;  Joukov V;
XX
DR   WPI; 1997-145688/13.
DR   N-PSDB; AAT84276.
XX
PT   Flt4 receptor tyrosine kinase ligand and related nucleic acid - used
PT   to modulate growth of endothelial cells and for diagnosis of
PT   endothelial cell diseases
XX
PS   Claim 7; Page 112-113; 184pp; English.
XX
CC   This polypeptide comprises the pre-pro sequence of human VEGF-C,
CC   a novel ligand that binds specifically to human Flt4 receptor
CC   tyrosine kinase (VEGFR-3), stimulating phosphorylation of the
CC   receptor.  Its sequence was deduced from a cDNA clone (AAT84276)
CC   obtd. from a PC-3 prostatic adenocarcinoma cell (ATCC CRL 1435)
CC   library.  The polypeptide, or its active fragments, can be
CC   expressed in transformed or transfected host cells for use in
CC   claimed methods for detecting endothelial cells (e.g. to image
CC   lymphatic vessels, endothelial venules, Flt4 receptor in
CC   histochemical tissue) and also to modulate the growth of mammalian
CC   endothelial cells (e.g. to accelerate angiogenesis and to promote
CC   endothelial function of lymphatic vessels).  Inhibitors of
CC   VEGF-C, such as antibodies, can be used to control endothelial
CC   cell proliferation, e.g. lymphangioma or metastatic cancer.
CC   Mouse and quail VEGF-C sequences (see AAW00934-35) have also been
CC   isolated.
XX
SQ   Sequence   419 AA;
```

```
  Query Match          100.0%;  Score 1053;  DB 18;  Length 419;
  Best Local Similarity  100.0%;  Pred. No. 1.5e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 fesqldlsdaepdageatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkggwq 91

Qy      61 HNPEQAANLNSFTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnpeqaanlnsfteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnsegLqcmntstsylskTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 msKldvyrqvhsiirr 227


RESULT   4
AAW11478
ID   AAW11478 standard; Protein; 419 AA.
XX
AC   AAW11478;
XX
DT   23-APR-1997  (first entry)
XX
DE   Human vascular endothelial growth factor 2.
XX
KW   Vascular endothelial growth factor 2; VEGF2; angiogenesis;
KW   endothelialisation; coronary bypass surgery; vascular graft surgery;
KW   agonist, antagonist, therapy; diagnosis.
XX
OS   Homo sapiens.
XX
FH   Key             Location/Qualifiers
FT   Peptide         1..46
FT                   /label= Sig_peptide
FT   Protein         47..419
FT                   /label= Mat_protein
FT                   /note= "the mature protein is separately claimed
FT                   (Claim 5)"
XX
PN   WO9639515-A1.
XX
PD   12-DEC-1996.
XX
PF   06-JUN-1996;    96WO-US09001.
XX
PR   06-JUN-1995;    95US-0465968.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Cao L,  Hu J,  Rosen CA;
XX
DR   WPI; 1997-043137/04.
DR   N-PSDB; AAT51371.
XX
PT   DNA encoding human vascular endothelial growth factor 2 - used to
PT   promote angiogenesis or endothelialisation in vascular graft surgery
XX
PS   Claim 1; Fig 2; 74pp; English.
XX
CC   Human vascular endothelial growth factor 2 (VEGF2) (AAW11478) is
CC   structurally related to the VEGF/PDGF family and is a potent
CC   mitogen for vascular endothelial cells, stimulating their growth
CC   and angiogenesis.  The amino acid sequence of VEGF2 was deduced
CC   from a cDNA clone (AAT51371) obtd. from an early stage human (week 9)
CC   embryo cDNA library.  VEGF2 polypeptides can be produced in
CC   transformed host cells and used to promote angiogenesis e.g., to
```

```
CC   stimulate the growth of transplanted tissue following coronary
CC   bypass surgery, or to promote endothelialisation in vascular graft
CC   surgery.  It can also be used to screen for antagonists (useful
CC   e.g. for tumour therapy) and agonists of VEGF2 activity.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 18;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 tesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvqkefgvatntf 151

Qy     121 PKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 tkppcvsvyrcggccnseglqcmntstsylskTLfeitvplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT   5
AAW75740
ID   AAW75740 standard; Protein; 419 AA.
XX
AC   AAW75740;
XX
DT   20-NOV-1998  (first entry)
XX
DE   Human vascular endothelial growth factor C protein.
XX
KW   FLT4; vascular endothelial growth factor C; vascular endothelial cell;
KW   lymphatic endothelial cell; myelopoiesis; angiogeneses; inflammation;
KW   lymphangiogenesis; oedema; elephantiasis; Milroy's disease.
XX
OS   Homo sapiens.
XX
PN   WO9833917-A1.
XX
PD   06-AUG-1998.
XX
PF   02-FEB-1998;   98WO-US01973.
XX
PR   05-FEB-1997;   97US-0795430.
XX
PA   (LUDW ) LUDWIG INST CANCER RES.
PA   (UYHE ) UNIV HELSINKI LICENSING LTD.
XX
PI   Alitalo K,  Joukov V;
XX
DR   WPI; 1998-443470/37.
DR   N-PSDB; AAV52576.
XX
PT   New isolated vascular endothelial growth factor polypeptide(s) -
PT   used to develop products for treating, e.g. cancers, inflammation,
PT   oedema, granulocytopenia or for wound healing or tissue
PT   transplantation
XX
PS   Claim 1; Page 112-115; 177pp; English.
XX
CC   The vascular endothelial growth factor C (VEGF-C) polypeptides have
CC   activities affecting growth and migration of vascular endothelial cells,
CC   promoting growth of lymphatic endothelial cells and lymphatic vessels,
CC   increasing vascular permeability, and affecting myelopoiesis.  The
CC   products can be used for stimulating angiogeneses, for inhibiting
CC   angiogenesis, for stimulating lymphangiogenesis, treatment or prevention
CC   of inflammation, oedema, elephantiasis, or Milroy's disease.  They can
CC   also be used to modulate myelopoiesis, e.g. treating granulocytopenia.
CC   They can also be used for modulating the growth of endothelial cells.
CC   They can also be used to stimulate lymphocyte production and maturation,
CC   and to promote or inhibit trafficking of leucocytes between tissues and
CC   lymphatic vessels or to affect migration in and out of the thymus.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 19;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 PESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 tesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvqkefgvatntf 151

Qy     121 PKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 tkppcvsvyrcggccnseglqcmntstsylskTLfeitvplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT   6
AAY80518
ID   AAY80518 standard; Protein; 419 AA.
XX
AC   AAY80518;
XX
DT   16-NOV-1999  (first entry)
XX
DE   Vascular endothelial growth factor 2 (VEGF-2).
XX
KW   Human vascular endothelial growth factor 2; VEGF-2;
KW   vascular endothelial cell growth; endothelial cell migration;
KW   angiogenesis; blood pressure; blood flow; immune system disorder;
KW   immune cell; cancer; autoimmune disorder; blood protein disorder;
KW   ataxia telangiectasia; common variable immunodeficiency;
KW   Digeorge syndrome; HIV infection; HTLV-BLV infection;
KW   leukocyte adhesion deficiency syndrome; lymphopenia;
KW   phagocyte bactericidal dysfunction, severe combined immunodeficiency;
KW   Wiskott-Aldrich disorder; anemia; thrombocytopenia; hemoglobinuria;
KW   allergy; asthma; allergic asthma.
XX
OS   Homo sapiens.
XX
PN   WO9946364-A1.
XX
PD   16-SEP-1999.
XX
PF   10-MAR-1999;   99WO-US05021.
XX
PR   13-MAR-1998;   98US-0042105.
PR   30-JUN-1998;   98US-0107997.
XX
PA   (HUMA ) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Cao L,  Hu J;
XX
DR   WPI; 1999-551399/46.
DR   N-PSDB; AAZ10524.
XX
PT   New human vascular endothelial growth factor 2, used for treating, e.g.
PT   immune disorders and cancers -
```

XX
PS Claim 12; Fig 1A-E; 222pp; English.
XX
CC The present sequence represents vascular endothelial growth factor-2
CC (VEGF-2). The VEGF-2 polypeptides have activities similar to VEGF. The
CC VEGF-2 polypeptides stimulate the growth of vascular endothelial cells,
CC stimulate endothelial cell migration, stimulate angiogenesis, decrease
CC blood pressure, and increase blood flow. The polynucleotides and
CC polypeptides can be used for preventing, treating or ameliorating a
CC medical condition. The VEGF 2 polypeptides or polynucleotides may be
CC useful in treating deficiencies or disorders of the immune system, by
CC activating or inhibiting the proliferation, differentiation, or
CC mobilization (chemotaxis) of immune cells. The etiology of these immune
CC deficiencies or disorders may be genetic, somatic, such as cancer or
CC some autoimmune disorders, acquired (e.g. by chemotherapy or toxins), or
CC infectious. Examples of immunologic deficiency syndromes include blood
CC protein disorders, ataxia telangiectasia, common variable
CC immunodeficiency, DiGeorge syndrome, HIV infection, HTLV-BLV infection,
CC leukocyte adhesion deficiency syndrome, lymphopenia, phagocyte
CC bactericidal dysfunction, severe combined immunodeficiency (SCIDs),
CC Wiskott-Aldrich disorder, anemia, thrombocytopenia, or hemoglobinuria.
CC They can also be used to modulate emostatic or thrombolytic activity.
CC Similarly allergic reactions and conditions such as asthma (particularly
CC allergic asthma) or other respiratory problems, may also be treated.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 1054; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.3e-94;
Matches 196; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
Db 32 fesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy 61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
Db 92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy 121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
Db 152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrc 211

Qy 181 MSKLDVYRQVHSIIRR 196
Db 212 mskldvyrqvhsiirr 227

RESULT 7
AAY22320
ID AAY22320 standard; protein; 419 AA.
XX
AC AAY22320;
XX
DT 22-SEP-1999 (first entry)
XX
DE Full length human VEGF2 protein sequence.
XX
KW VEGF2; vascular endothelial growth factor 2; angiogenesis; bone damage;
KW endothelial cell proliferation; tissue damage; therapy.
XX
OS Homo sapiens.
XX
PN US5932540-A.
XX
PD 03-AUG-1999.
XX
PF 24-DEC-1997; 97US-0999811.
XX
PR 24-DEC-1997; 97US-0999811.
PR 28-MAR-1994; 94US-0207560.
PR 06-JUN-1995; 95US-0465968.
XX
PA (HUMA-) HUMAN GENOME SCI INC.
XX
PI Cao L, Hu J, Rosen CA;
XX
DR WPI; 1999-443606/37.
DR N-PSDB; AAX84837.
XX
PT Vascular endothelial growth factor 2 for wound healing and vascular
PT repair
XX
PS Claim 1; Fig 1; 49pp; English.
XX
CC This sequence is the vascular endothelial growth factor 2 (VEGF2),
CC of the invention. The isolated polypeptide is useful for stimulating
CC angiogenesis, by promoting the proliferation of endothelial cells, for
CC the treatment of a wound, or for the treatment of tissue or bone damage.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 1053; DB 20; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.3e-94;
Matches 196; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
Db 32 fesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy 61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
Db 92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy 121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
Db 152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrc 211

Qy 181 MSKLDVYRQVHSIIRR 196
Db 212 mskldvyrqvhsiirr 227

RESULT 8
AAW86203
ID AAW86203 standard; protein; 419 AA.
XX
AC AAW86203;
XX
DT 16-FEB-1999 (first entry)
XX
DE Human vascular endothelial growth factor (VEGF)-C sequence.
XX
KW VEGF; VRP; vascular endothelial growth factor; VEGF-related protein;
KW recombinant; truncated; gene therapy; angiogenesis; cardiac ischaemia;
KW coronary; collateral vessel development; cell growth; migration; heart;
KW lower limb ischaemia; stroke; peripheral vascular disease; intestine;
KW wound healing; skin; vascular permeability.
XX
OS Homo sapiens.
XX
PN WO9849300-A2.
XX
PD 05-NOV-1998.
XX
PF 20-APR-1998; 98WO-US07801.
XX
PR 25-APR-1997; 97US-0842984.
XX
PA (COLL-) COLLATERAL THERAPEUTICS.
XX
PI Bohlen P;
XX
DR WPI; 1999-009426/01.

```
XX
PT   New truncated vascular endothelial growth factor related protein
PT   subunits   lack part of the N terminal sequence, used to stimulate
PT   angiogenesis, e.g. for treating heart disease and ischaemia
XX
PS   Disclosure; Fig 1; 111pp; English.
XX
CC   This represents the amino acid sequence of human vascular endothelial
CC   growth factor (VEGF) C protein. The invention provides truncated VRP
CC   (VEGF related protein) subunits that have at least one amino acid
CC   N terminal to the first Cys of the core sequence deleted. Host cells
CC   transformed or transfected with expression vectors containing nucleic
CC   acids encoding the truncated VRP subunits are used to produce the
CC   truncated proteins recombinantly. The truncated VRP subunits, optionally
CC   expressed from gene therapy vectors, have in vivo and in vitro angiogenic
CC   activity and are used to stimulate angiogenesis, particularly coronary
CC   collateral vessel development in cases of cardiac ischaemia; to stimulate
CC   endothelial cell growth and migration in vitro; to treat heart disease;
CC   to treat ischaemia (e.g.cardiac, chronic coronary or chronic lower limb
CC   ischaemia; stroke and peripheral vascular disease); to promote healing of
CC   wounds (of skin or intestines), and to increase vascular permeability.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 20;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 EESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 teSqldlsdaepdaqeataYaSkdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmpreveidvgketgvatntf 151

Qy     121 PKPPVVSVYPCGCCNSECLQCMNESTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 kppvvsvypcgccnsecLqcmnestsylskTlfeitvplsqgpkpvtistanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT   9
AAB10648
ID   AAB10648 standard; Protein; 419 AA.
XX
AC   AAB10648;
XX
DT   19-JAN-2001  (first entry)
XX
DE   Human VEGF protein.
XX
KW   VEGF X; vascular endothelial growth factor; human; vulnerary; cytostatic;
KW   antirheumatic; antiarthritic; antipsoriatic; antidiabetic; treatment;
KW   angiogenesis regulator; vascularization regulator; cancer; psoriasis;
KW   rheumatoid arthritis; diabetic retinopathy; blood vessel; organ repair;
KW   tissue regeneration; tissue repair; wound; dermal ulcer; pressure sore;
KW   venous sore; diabetic ulcer; burns; skin graft growth; VEGF.
XX
OS   Homo sapiens.
XX
PN   WO200037641-A2.
XX
PD   29-JUN-2000.
XX
PF   21-DEC-1999;   99WO-US30503.
XX
PR   22-DEC-1998;   98GB-0028377.
PR   18-MAR-1999;   99US-0124967.
PR   08-NOV-1999;   99US-0164131.
XX
PA   (JANS-) JANSSEN PHARM NV.
XX
PI   Gordon RD,  Sprengel JJ,  Yon JP,  Dijkmans IJH,  Gosiewska A;
PI   Dhanaraj SN,  Xu J;
XX
DR   WPI; 2000-442669/38.
XX
PT   New vascular endothelial growth factor protein, useful for treating or
PT   preventing diseases associated with inappropriate angiogenesis activity
PT   such as cancer, rheumatoid arthritis, psoriasis and wounds
XX
PS   Disclosure; Fig 11; 127pp; English.
XX
CC   This invention describes a novel vascular endothelial growth factor X
CC   (VEGF-X) protein (1a) and its encoding polynucleotide (1la) which has
CC   vulnerary, cytostatic, antirheumatic, antiarthritic, antipsoriatic and
CC   antidiabetic activity and acts as an angiogenesis and vascularization
CC   regulator. An antisense molecule of the invention is useful for treating
CC   or preventing cancer, rheumatoid arthritis, psoriasis and diabetic
CC   retinopathy by inhibiting angiogenic activity or inappropriate
CC   vascularization including formation and proliferation of new blood
CC   vessels, growth and development of tissues, tissue regeneration and organ
CC   and tissue repair in a subject. The products of the invention are useful
CC   for preparing medicaments for treating wounds such as dermal ulcers,
CC   pressure sores, venous sores, diabetic ulcers and burns and to promote
CC   skin graft growth, tissue repair, proliferation of new blood vessels,
CC   tissue regeneration and organ repair by promoting angiogenic activity or
CC   vascularization. This sequence represents the human VEGC protein used
CC   to illustrate the method of the invention.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 EESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 teSqldlsdaepdaqeataYaSkdleeqlrsvssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmpreveidvgketgvatntf 151

Qy     121 PKPPVVSVYPCGCCNSECLQCMNESTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 kppvvsvypcgccnsecLqcmnestsylskTlfeitvplsqgpkpvtistanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT  10
AAB29048
ID   AAB29048 standard; Protein; 419 AA.
XX
AC   AAB29048;
XX
DT   11-JAN-2001  (first entry)
XX
DE   Human VEGF-C protein sequence.
XX
KW   Human; FLT4; fms-like tyrosine kinase 4; lymphoedema;
KW   vascular endothelial growth factor receptor 3; VEGFR 3;
KW   Milroy-Nonne syndrome; lymphoedema praecox; VEGF C;
KW   vascular endothelial growth factor C.
XX
OS   Homo sapiens.
XX
```

```
PN   WO200058511-A1.
XX
PD   05-OCT-2000.
XX
PF   26-MAR-1999;   99WO-US06144.
XX
PR   26-MAR-1999;   99WO-US06144.
XX
PA   (LUDW-) LUDWIG INST CANCER RES.
PA   (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA   (UYPI ) UNIV PITTSBURGH.
XX
PI   Ferrell RE,  Alitalo K,  Finegold DN,  Karkkainen M;
XX
DR   WPI; 2000-679298/66.
DR   N-PSDB; AAC62406
XX
PT   Screening a human subject for increased risk of developing a lymphatic
PT   disorder, comprises assaying a nucleic acid to determine a mutation
PT   altering the sequence of a vascular endothelial growth factor
PT   receptor-3 -
XX
PS   Disclosure; Page 60-61; 76pp; English.
XX
CC   The present sequence is the protein sequence for the human vascular
CC   endothelial growth factor C (VEGF-C). It was used to demonstrate the
CC   methods of the invention, which involve the screening of individuals to
CC   determine which vascular endothelial growth factor receptor 3 (VEGFR 3,
CC   also known as Flt4 or fms like tyrosine kinase 4) alleles they possess
CC   and thus their likelihood of developing hereditary lymphoedema
CC   Conditions associated with lymphoedema include Milroy-Nonne syndrome,
CC   which is early onset lymphoedema and lymphoedema praecox, which is late
CC   onset.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             100.0%;  Score 1053;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAFPDAGFATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 fesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqqwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
          ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227
```

```
RESULT  11
AAY97144
ID   AAY97144 standard; Protein; 419 AA.
XX
AC   AAY97144;
XX
DT   22-DEC-2000  (first entry)
XX
DE   Vascular endothelial growth factor-2 (VEGF-2).
XX
KW   Vascular endothelial growth factor 2; VEGF-2; retina; angiogenesis;
KW   treatment; injury; degeneration; photoreceptors; eye;
KW   angioid streaks, retinitis, pigmentosa; human;
KW   age-related macular degeneration; diabetic retinopathy.
XX
```

```
OS   Homo sapiens.
XX
PN   WO200045835-A1.
XX
PD   10-AUG-2000.
XX
PF   07-FEB-2000; 2000WO-US03047.
XX
PR   08-FEB-1999;   99US-0119179.
PR   12-FEB-1999;   99US-0119926.
PR   03-JUN-1999;   99US-0137796.
PR   22-DEC-1999;   99US-0171505.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Alderson R,  Molder R,  Roschke V,  Rohen SM;
XX
DR   WPI; 2000-543864/48.
DR   N-PSDB; AAA52080.
XX
PT   Treating injury or degeneration of photoreceptors comprises
PT   administering to a subject vascular endothelial growth factor 2
PT   (VEGF-2)
XX
PS   Claim 31; Fig 1a-e; 252pp; English.
XX
CC   Administration of vascular endothelial growth factor 2 (VEGF-2)
CC   to a patient can be used for treating injury or degeneration of
CC   photoreceptors associated with e.g. angioid streaks, retinitis
CC   pigmentosa, age-related macular degeneration, diabetic retinopathy,
CC   etc. VEGF-2 promotes angiogenesis, the formation of new blood
CC   vessels in the retina.
XX
SQ   Sequence   419 AA;
```

```
  Query Match             100.0%;  Score 1053;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAFPDAGFATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 fesqldlsdaepdaqeatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkqqwq 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
          ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227
```

```
RESULT  12
AAY70749
ID   AAY70749 standard; Protein; 419 AA.
XX
AC   AAY70749;
XX
DT   17-AUG-2000  (first entry)
XX
DE   Human prepro-vascular endothelial growth factor C.
XX
KW   Human; receptor tyrosine kinase; RTK; Flt4; fms-like tyrosine kinase 4;
KW   VEGFR-3; vascular endothelial growth factor receptor-3; chromosome 5q35;
KW   cytostatic; tumour imaging; anti-tumour therapy; treatment; diagnosis;
KW   neoplastic disease; lymphoma; carcinoma; breast; squamous cell; melanoma;
KW   sarcoma; malignancy; VEGF-C; vascular endothelial growth factor C.
XX
```

OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..31
FT /label= signal_peptide
FT Peptide 32..103
FT /label= N terminal_peptide
FT /note= "cleavage of this peptide from partially processed
FT VEGF-C produces a fully processed mature form of VEGF-C
FT of 21-23 kb which has high affinity to VEGFR-2"
FT Protein 104..227
FT /label= Mature VEGF-C
FT Peptide 228..419
FT /label= C terminal peptide
FT /note= "Has a pattern of spaced cysteine residues
FT reminiscent of a Balbiani ring 3 protein (BR3P) sequence;
FT cleavage of signal peptide and the C terminal
FT peptide produces a partially processed form of VEGF-C of
FT about 29 kb which has high affinity to Flt4 (VEGFR-3)"
FT Binding site 113..213
FT /note= "binds and stimulates VEGF-C receptors; Cys
FT at position 156 is essential for VEGFR-2 binding and at
FT 165 is essential for VEGFR-2 and VEGFR-3 binding"
FT Region 131..211
FT /note= "important for VEGF-C activity"
XX
PN WO200021560-A1.
XX
PD 20-APR-2000.
XX
PF 08-OCT-1999; 99WO-US23525.
XX
PR 09-OCT-1998; 98US-0169079.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
XX
PI Alitalo K, Kaipainen A, Valtola R, Jussila L;
XX
DR WPI; 2000-317850/27.
XX
PT Treating neoplastic diseases such as lymphoma, carcinomas, melanomas
PT and sarcomas, involves administering a compound capable of inhibiting
PT binding of ligand proteins to fms-like tyrosine kinase-4 receptor
XX
PS Example 15-17; Page 140-142; 148pp; English.
XX
CC The patent discloses a method to treat neoplastic disease characterised
CC by expression of fms-like tyrosine kinase 4 (Flt4) receptor (also
CC referred as vascular endothelial growth factor receptor-3, VEGFR-3) in
CC endothelial cells of blood vessels adjacent to malignant neoplasm. The
CC method involves administering a compound that inhibits binding of a
CC ligand to Flt4 thereby inhibiting Flt4 mediated proliferation of vascular
CC endothelial cells. The compound is useful for treating neoplastic disease
CC such as breast carcinomas, squamous cell carcinomas, lymphomas, melanomas
CC and sarcomas. Flt4 receptor tyrosine kinase binding compounds can be used
CC for manufacturing medicament useful for diagnostic screening, imaging and
CC treatment of malignancies characterised by Flt4 expressing blood cells.
CC The Flt4 gene maps to chromosomal region 5q35 and is expressed as 5.8 kb
CC and 4.5 kb mRNAs which differ in their 3' sequences and are
CC differentially expressed in HEL and DAMI cell lines. Flt4
CC belongs to a subfamily of class III receptor tyrosine kinases (RTKs).
CC It is used as a target for tumour imaging and anti-tumour therapy.
CC The present sequence is a human prepro vascular endothelial growth
CC factor C (VEGF C), a specific example of Flt4 binding compound.
XX
SQ Sequence 419 AA;

Query Match 100.0%; Score 1053; DB 21; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.3e-94;
Matches 196; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 32 fesgldlsdaepdageatayaskdleeqlrsvssvdelmtvlypeywkmykcqlrkggwq 91

Qy 61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 92 hnreqanlnsrteetikfaaahynteilksidnewrktqcmprevcidvgkefgvatntf 151

Qy 121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db 152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtisfanhtscrc 211

Qy 181 MSKLDVYRQVHSIIRR 196
||||||||||||||||
Db 212 mskldvyrqvhsiirr 227

RESULT 13
AAY70982
ID AAY70982 standard; Protein; 419 AA.
XX
AC AAY70982;
XX
DT 09-AUG-2000 (first entry)
XX
DE Human vascular endothelial growth factor (VEGF)-C protein.
XX
KW Vascular endothelial growth factor C; VEGF; human; re-endothelialisation;
KW vascular endothelial growth factor receptor; VEGFR; vascular trauma;
KW blood vessel; cardiovascular surgery; anti-restenosis agent; prevention;
KW restenosis; stenosis; percutaneous transluminal coronary angioplasty.
XX
OS Homo sapiens.
XX
FH Key Location/Qualifiers
FT Peptide 1..31
FT /label= Signal_peptide
FT /note= "Cleavage results in partially processed VEGF-C
FT protein (29 kD)"
FT Peptide 32..103
FT /label= Amino_terminal_peptide
FT /note= "Cleavage results in fully processed mature
FT VEGF-C protein (21-23 kD)"
FT Protein 104..227
FT /label= Mature human VEGF-C
FT /note= "Processed vascular epithelial growth factor C"
FT Binding site 83
FT /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT Active-site 131..211
FT /note= "Essential for biological activity of protein"
FT Binding-site 137
FT /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT Binding-site 156
FT /note= "Essential for VEGFR-2 binding"
FT Binding-site 165
FT /note= "Essential for VEGFR-2 and VEGFR-3 binding"
FT Peptide 228..419
FT /label= Carboxy_terminal_peptide
FT /note= "Cleavage results in partially processed VEGF-C
FT protein (29 kD)"
XX
PN WO200024412-A2.
XX
PD 04-MAY-2000.
XX
PF 26-OCT-1999; 99WO-US24054.
XX
PR 26-OCT-1998; 98US-0105587.
XX
PA (LUDW-) LUDWIG INST CANCER RES.
PA (UYHE-) UNIV HELSINKI LICENSING LTD OY.
PA (YLAH/) YLA-HERTTUALA S.
XX

```
PI   Yla-herttuala S,  Alitalo K,  Hiltunen MO,  Jeltsch MM,  Achen MG;
XX
DR   WPI; 2000-450584/40.
DR   N-PSDB; AAD00339, AAD00353.
XX
PT   Preventing stenosis and restenosis in mammals using vascular
PI   endothelial growth factor proteins or the nucleic acids encoding them -
XX
PS   Claim 5; Page 51-53; 61pp; English.
XX
CC   The present amino acid sequence is the complete human prepro-vascular
CC   endothelial growth factor (VEGF)-C. VEGF-C has the ability to stimulate
CC   re-endothelialisation of an injured blood vessel, without significant
CC   stimulation of smooth muscle cell proliferation. It can bind to and
CC   stimulate VEGFR 2 (vascular endothelial growth factor receptor) and/or
CC   VEGFR-3 phosphorylation in cells that express such receptors. An
CC   anti-restenosis agent comprising either a VEGF-C gene or protein is
CC   used in a method to reduce or prevent restenosis and stenosis of a blood
CC   vessel following vascular trauma e.g., cardiovascular surgery and
CC   percutaneous transluminal coronary angioplasty.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 21;  Length 419;
  Best Local Similarity   100.0%;  Prod. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAPPDAGFATAYASKDLEVGLRVSSSVDLMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 fesqldlsdaepdagfatayaskdlevglrvsssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNRFQANLNSRTFFTTKPAAAHYNTFILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrtfttkpaaahyntfilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIIVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnsegLqcmntstsylskTlfeiivplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT  14
AAY97570
ID   AAY97570 standard; Protein; 419 AA.
XX
AC   AAY97570;
XX
DT   05-APR-2001  (first entry)
XX
DE   Human VEGF-B protein sequence.
XX
KW   Human; angiogenic protein; wound healing; vascular tissue repair;
KW   peripheral arterial disease; critical limb ischaemia; coronary disease;
KW   angiogenesis; tumour; inflammation; diabetic retinopathy; psoriasis;
KW   rheumatoid arthritis; autoimmune disease; allergy; cancer; therapy;
KW   infectious disease; neurodegeneration;
KW   vascular endothelial growth factor-B; VEGF-B.
XX
OS   Homo sapiens.
XX
PN   WO200075163-A1.
XX
PD   14-DEC-2000.
XX
PF   01-JUN-2000; 2000WO-US14925.
XX
PR   03-JUN-1999;  99US-0147796.
XX
PA   (HUMA-) HUMAN GENOME SCI INC.
XX
PI   Rosen CA,  Ruben SM,  Hu J,  Cao L;
XX
DR   WPI; 2001-071057/08.
DR   N-PSDB; AAA91004.
XX
PT   New nucleic acid encoding angiogenic proteins, useful e.g. for
PT   promoting healing of wounds and treating peripheral arterial disease,
PT   critical limb ischaemia or coronary disease -
XX
PS   Claim 11; Fig 1; 244pp; English.
XX
CC   This sequence is vascular endothelial growth factor-B (VEGF-B),
CC   which is an angiogenic protein of the invention. The angiogenic proteins
CC   and the DNA sequences encoding them, are used to prevent, treat or
CC   ameliorate disease and to detect diseases, or susceptibility, by
CC   detecting mutations or the presence or amount of angiogenic protein
CC   expression. Particularly they are used to stimulate wound healing,
CC   growth of damaged bone and tissue, and for repair of vascular tissue,
CC   especially, peripheral arterial disease, critical limb ischaemia or
CC   coronary disease. Antagonists of the sequences are used to inhibit
CC   angiogenesis in tumours and to treat inflammation (where associated with
CC   increased vascular permeability), diabetic retinopathy, rheumatoid
CC   arthritis or psoriasis. Agonists are also useful for stimulating
CC   (lymph)angiogenesis. The proteins are also used to identify specific
CC   binding agents (potential therapeutic agents) and to raise antibodies.
CC   The antibodies are useful as therapeutic (ant)agonists; for detection,
CC   purification and targeting of proteins for in vivo or in vitro diagnosis
CC   (including imaging) or for therapy (including when linked to e.g. a label
CC   or cytotoxin); and for immunotyping of cells, e.g. for detecting minimal
CC   residual disease of haematopoietic progenitor/stem cells. It is also
CC   contemplated that the sequences might be useful for treating a very wide
CC   range of other disorders, e.g. autoimmune diseases; allergy; cancer;
CC   infectious diseases (viral, bacterial, fungal or parasitic);
CC   neurodegeneration, also as chemotactic agents or for stimulating
CC   regeneration of the nervous system etc.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1053;  DB 22;  Length 419;
  Best Local Similarity   100.0%;  Prod. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGFATAYASKDLEVGLRVSSSVDLMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 fesqldlsdaepdagfatayaskdlevglrvsssvdelmtvlypeywkmykcqlrkqgwq 91

Qy      61 HNRFQANLNSRTFFTTKPAAAHYNTFILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 hnreqanlnsrtfttkpaaahyntfilksidnewrktqcmprevcidvgkefgvatntf 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIIVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 fkppcvsvyrcggccnsegLqcmntstsylskTlfeiivplsqgpkpvtisfanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


RESULT  15
AAB37605
ID   AAB37605 standard; Protein; 419 AA.
XX
AC   AAB37605;
XX
DT   27-FEB-2001  (first entry)
XX
DE   Human VEGF-C.
XX
KW   Human; gene therapy; lymphatic disorder, hereditary lymphedooma; Flt4;
KW   vascular endothelial growth factor receptor-3; VEGFR-3; VEGF-C; VEGF-D;
```

```
KW   tms like tyrosine kinase 4.
XX
OS   Homo sapiens.
XX
PN   CA2284470 A1.
XX
PD   26 SEP 2000.
XX
PF   29 SEP 1999;   99CA 2284470.
XX
PR   26 MAR 1999;   99WO US06133.
PR   16 AUG 1999;   99US 0375248.
XX
PA   (UYPI ) UNIV PITTSBURGH.
PA   (UYHE ) UNIV HELSINKI LICENSING LTD OY.
PA   (LUDW ) LUDWIG INST CANCER RES.
XX
PI   Alitalo K, Ferrell RE, Finegold DN, Karkkainen M;
XX
DR   WPI; 2001 037762/02.
DR   N-PSDB; AAC68952.
XX
PT   Screening a human for an increased risk of developing lymphatic
PT   disorder comprises assaying nucleic acid for alterations in the
PT   sequences expressing vascular endothelial growth factor receptor-3
XX
PS   Disclosure; Pages 62 63; 99pp; English.
XX
CC   The present invention relates to a method for screening a human subject
CC   for an increased risk of developing a lymphatic disorder e.g. hereditary
CC   lymphedoema. The method comprises assaying nucleic acid of a human
CC   subject to determine a presence or an absence of a mutation altering the
CC   sequence or expression of vascular endothelial growth factor receptor-3
CC   (VEGFR 3)/tms like tyrosine kinase 4 (Flt4) allele (see AAC68952 and
CC   AAB37604) and determining an increased risk of developing lymphatic
CC   disorder from presence or absence of the mutation. The presence of a
CC   mutation altering the encoded amino acid sequence or expression of at
CC   least 1 VEGFR 3 allele in the nucleic acid correlates with an increased
CC   risk of developing a lymphatic disorder. Treatment for hereditary
CC   lymphedoema can be provided through the administration of vascular
CC   endothelial growth factor C (VEGF-C) and vascular endothelial growth
CC   factor D VEGF-D genes (via gene therapy) and proteins. The present
CC   sequence is the protein sequence for VEGF C.
XX
SQ   Sequence   419 AA;


  Query Match             100.0%;  Score 1054;  DB 22;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.3e-94;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLGHLSDAEEDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
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Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
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Db     152 fkppcvsvyrcggccnseglqcmntstsylsktlfeitvplsqgpkpvtistanhtscrc 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 mskldvyrqvhsiirr 227


Search completed: December 26, 2001, 11:28:08
Job time: 3221 sec
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GenCore version 4.5

OM protein - protein search, using sw model

Run on: December 26, 2001, 11:29:32 ; Search time 70.86 Seconds
(without alignments)
62.244 Million cell updates/sec

Title: US-09-534-376A-8_COPY_32_227
Perfect score: 1053
Sequence: 1 FESGILDLSDAEPDAGEATAY.....SQRCMSKLDVYRQVHSIIRR 196

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 212252 seqs, 22503292 residues

Total number of hits satisfying chosen parameters: 212252

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : Issued_Patents_AA:*
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2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep *
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep *
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep *
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep *
6: /cgn2_6/ptodata/2/iaa/backfile1.pep *

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
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2	1053	100.0	419	3	US-09-042-105-2	Sequence 2, Appli
3	1053	100.0	419	3	US-09-042-105-18	Sequence 18, Appl
4	1053	100.0	419	4	US-08-795-430-8	Sequence 8, Appli
5	1053	100.0	419	4	US-08-510-133A-35	Sequence 35, Appl
6	1047	99.4	419	5	PCT-US96-09001-2	Sequence 2, Appli
7	931	88.4	415	4	US-08-795-430-11	Sequence 11, Appl
8	893	84.8	418	4	US-08-795-430-13	Sequence 13, Appl
9	869	82.5	350	2	US-08-999-811-4	Sequence 4, Appli
10	869	82.5	450	2	PCT-US08-824-996-2	Sequence 2, Appli
11	869	82.5	450	3	US-09-042-105-4	Sequence 4, Appli
12	869	82.5	450	4	US-08-510-133A-33	Sequence 33, Appl
13	869	82.5	450	4	US-08-595-895-33	Sequence 33, Appl
14	489	46.4	421	4	US-08-915-795-9	Sequence 9, Appli
15	489	46.4	458	4	US-08-915-795-8	Sequence 8, Appli
16	478	45.4	425	4	US-08-915-795-3	Sequence 3, Appli
17	478	45.4	454	4	US-08-915-795-5	Sequence 5, Appli
18	195	18.5	214	6	5240848-11	Patent No. 5240848
19	195	18.5	215	3	US-08-807-992B-3	Sequence 3, Appli
20	195	18.5	215	4	US-08-586-039B-49	Sequence 49, Appl
21	195	18.5	215	6	5240848-7	Patent No. 5240848
22	195	18.5	242	2	US-08-999-811-7	Sequence 7, Appli
23	195	18.5	242	2	US-08-824-996-9	Sequence 9, Appli
24	195	18.5	242	3	US-08-807-992B-4	Sequence 4, Appli
25	195	18.5	242	3	US-09-042-105-7	Sequence 7, Appli
26	194.5	18.5	241	5	PCT-US96-09001-10	Sequence 10, Appl
27	192	18.2	147	3	US-08-807-992B-1	Sequence 1, Appli
28	192	18.2	191	3	US-08-567-209A-2	Sequence 2, Appli
29	192	18.2	191	3	US-08-807-992B-2	Sequence 2, Appli
30	192	18.2	191	3	US-08-691-794-2	Sequence 2, Appli
31	192	18.2	191	4	US-08-795-430-56	Sequence 56, Appl
32	192	18.2	191	6	5332671-4	Patent No. 5332671
33	190.5	18.1	145	3	US-08-784-551C-2	Sequence 2, Appli
34	190.5	18.1	215	6	5219739-22	Patent No. 5219739
35	187.5	17.8	121	6	5194596-19	Patent No. 5194596
36	187.5	17.8	121	6	5219739-20	Patent No. 5219739
37	187.5	17.8	165	6	5194596-18	Patent No. 5194596
38	187.5	17.8	165	6	5219739-19	Patent No. 5219739
39	182.5	17.3	109	3	US-08-691-794-3	Sequence 3, Appli
40	176	16.7	189	1	US-08-469-427A-15	Sequence 15, Appl
41	175.5	16.7	190	6	5332671-3	Patent No. 5332671
42	172.5	16.4	120	6	5194596-9	Patent No. 5194596
43	172.5	16.4	120	6	5219739-9	Patent No. 5219739
44	172.5	16.4	146	4	US-08-586-039B-33	Sequence 33, Appl
45	172.5	16.4	164	6	5194596-17	Patent No. 5194596

ALIGNMENTS

RESULT 1
US-08-999-811-2
; Sequence 2, Application US/08999811
; Patent No. 5932540
; GENERAL INFORMATION:
; APPLICANT: HU, JING-SHAN
; APPLICANT: ROSEN, CRAIG A.
; APPLICANT: [illegible] LIANG
; TITLE OF INVENTION: VASCULAR ENDOTHELIAL GROWTH FACTOR 2
; NUMBER OF SEQUENCES: 15
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: SIDLEY, AUSTIN, BROWN & WOOD
; STREET: 717 NEW YORK AVENUE
; CITY: WASHINGTON
; STATE: DC
; COUNTRY: USA
; ZIP: 20005
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/999,811
; FILING DATE: HEREWITH
; CLASSIFICATION:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/207,550
; FILING DATE: 8-MAR-1994
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/465,968
; FILING DATE: 06-JUN-1995
; ATTORNEY/AGENT INFORMATION:
; NAME: MARKOWICZ, KAREN R.
; REGISTRATION NUMBER: 36,351
; REFERENCE/DOCKET NUMBER: 1488.1000004
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202)371-2600
; TELEFAX: (202)371-2540
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 419 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US 08-999 811-2

Query Match 100.0%; Score 1053; DB 2; Length 419;
Best Local Similarity 100.0%; Pred. No. 1.2e-107;

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  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Db     152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy     181 MSKLDVYRQVHSIIRR 196
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Db     212 MSKLDVYRQVHSIIRR 227


RESULT   2
US-09-042-105-2
; Sequence 2, Application US/09042105
; Patent No. 6040157
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING SHAN
;    APPLICANT:  ROSEN, CRAIG A.
;    APPLICANT:  CAO, LIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  35
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC DOS/MS DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/042,105
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8 MAR 1994
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06 JUN 1995
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  TO BE ASSIGNED
;      FILING DATE:  24 DEC 1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  ERIC K. STEFFE
;      REGISTRATION NUMBER:  36,688
;      REFERENCE/DOCKET NUMBER:  1388.[illegible]/EKS
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202)371 2600
;      TELEFAX:  (202)371 2540
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-09-042-105-2
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Db     212 MSKLDVYRQVHSIIRR 227


RESULT   3
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; Sequence 18, Application US/09042105
; Patent No. 6040157
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING-SHAN
;    APPLICANT:  ROSEN, CRAIG A.
;    APPLICANT:  CAO, LIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  35
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/09/042,105
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8-MAR-1994
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06-JUN-1995
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  TO BE ASSIGNED
;      FILING DATE:  24-DEC-1997
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  ERIC K. STEFFE
;      REGISTRATION NUMBER:  36,688
;      REFERENCE/DOCKET NUMBER:  1388.[illegible]/EKS
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202)371-2600
;      TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
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US-08-042-105-18


  Query Match             100.0%;  Score 1053;  DB 3;  Length 419;
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  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

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Qy      61 HNRFQANLNSRTEETIKFAAAHYNTEILKSIDNEWRRTQWMPREVCIDVGKEFGVATNTF 120
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Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy     181 MSKLDVYRQVHSIIRR 196
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Db     212 MSKLDVYRQVHSIIRR 227


RESULT   4
US-08-795-430-8
; Sequence 8, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;    TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;    NUMBER OF SEQUENCES:  57
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,430
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/FI96/00427
;      FILING DATE:  01-AUG-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/671,573
;      FILING DATE:  28-JUN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/601,132
;      FILING DATE:  14-FEB-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/585,895
;      FILING DATE:  12-JAN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/510,133
;      FILING DATE:  01-AUG-1995
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/340,011
;      FILING DATE:  14-NOV-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  29367/38041
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-3856
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  419 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-430-8


  Query Match             100.0%;  Score 1053;  DB 4;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-107;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FFSGLDLSDAFPDAGFATAYASKDLFFQLRSVSSVDFLMIVLYPFYWKMYKCQLRKGGWQ 60
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Qy      61 HNRFQANLNSRTEETIKFAAAHYNTEILKSIDNEWRRTQWMPREVCIDVGKEFGVATNTF 120
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Qy     181 MSKLDVYRQVHSIIRR 196
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Db     212 MSKLDVYRQVHSIIRR 227


RESULT   5
US-08-510-133A-35
; Sequence 35, Application US/08510133A
; Patent No. 6221839
;   GENERAL INFORMATION:
;        APPLICANT: Alitalo, Kari
;                   Joukov, Vladomir
;        TITLE OF INVENTION: Receptor Ligand
;        NUMBER OF SEQUENCES: 35
;        CORRESPONDENCE ADDRESS:
;             ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;             STREET: 6300 Sears Tower, 233 South Wacker Drive
;             CITY: Chicago
;             STATE: Illinois
;             COUNTRY: United States of America
;             ZIP: 60606-6402
;        COMPUTER READABLE FORM:
;             MEDIUM TYPE: Floppy disk
;             COMPUTER: IBM PC compatible
;             OPERATING SYSTEM: PC-DOS/MS-DOS
;             SOFTWARE: PatentIn Release #1.0, Version #1.25
;        CURRENT APPLICATION DATA:
;             APPLICATION NUMBER: US/08/510,133A
;             FILING DATE: 01-Aug-1995
;             CLASSIFICATION: Unknown
;        ATTORNEY/AGENT INFORMATION:
;             NAME: Gass, David A.
;             REGISTRATION NUMBER: 38,153
;             REFERENCE/DOCKET NUMBER: 29367/32863
;        TELECOMMUNICATION INFORMATION:
;             TELEPHONE: 312/474-6300
;             TELEFAX: 312/474-0448
;             TELEX: 25-3856
;   INFORMATION FOR SEQ ID NO: 35:
;        SEQUENCE CHARACTERISTICS:
;             LENGTH: 419 amino acids
;             TYPE: amino acid
;             TOPOLOGY: linear
;        MOLECULE TYPE: protein
;        SEQUENCE DESCRIPTION: SEQ ID NO: 35:
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US-08-510-133A-35

  Query Match             100.0%;  Score 1053;  DB 4;  Length 419;
  Best Local Similarity   100.0%;  Pred. No. 1.2e-107;
  Matches  196;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
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Db      32 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
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Db      92 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 MSKLDVYRQVHSIIRR 227


RESULT   6
PCT/US96/09001/2
; Sequence 2, Application PC/TUS9609001
;  GENERAL INFORMATION:
;     APPLICANT:  HU, ET AL.
;     TITLE OF INVENTION:  Human Vascular EndothelialGrowth Factor 2
;     NUMBER OF SEQUENCES:  10
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  CARELLA, BYRNE, BAIN, GILFILLAN,
;       ADDRESSEE:  CECCHI, STEWART & OLSTEIN
;       STREET:  6 BECKER FARM ROAD
;       CITY:  ROSELAND
;       STATE:  NEW JERSEY
;       COUNTRY:  USA
;       ZIP:  07068
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  3.5 INCH DISKETTE
;       COMPUTER:  IBM PS/2
;       OPERATING SYSTEM:  MS DOS
;       SOFTWARE:  WORD PERFECT 5.1
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  PCT/ TUS96/09001
;       FILING DATE:
;       CLASSIFICATION:
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/465,968
;       FILING DATE:  6 JUN 95
;       APPLICATION NUMBER:  08/207,550
;       FILING DATE:  8 MAR 1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  FERRARO, GREGORY D.
;       REGISTRATION NUMBER:  36,134
;       REFERENCE/DOCKET NUMBER:  325800 288
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  201 994-1700
;       TELEFAX:  201 994 1744
;   INFORMATION FOR SEQ ID NO:  2:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  419 AMINO ACIDS
;       TYPE:  AMINO ACID
;       STRANDEDNESS:
;       TOPOLOGY:  LINEAR
;     MOLECULE TYPE:  PROTEIN
PCT/US96/09001/2


  Query Match             99.4%;  Score 1047;  DB 5;  Length 419;
  Best Local Similarity   99.5%;  Pred. No. 5.3e-107;
  Matches  195;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVLYPEYWKMYKCQLRKGGWQ 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      32 FESGLDLSDAEPDAGEATAYASKDLEEQLRSVSSVDELMTVKYPEYWKMYKCQLRKGGWQ 91

Qy      61 HNREQANLNSRTEETIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      92 HNREQANLNSRTEELIKFAAAHYNTEILKSIDNEWRKTQCMPREVCIDVGKEFGVATNTF 151

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     152 FKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 211

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     212 MSKLDVYRQVHSIIRR 227


RESULT   7
US-08-795-430-11
; Sequence 11, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;     APPLICANT:  Alitalo, Kari
;     APPLICANT:  Jeltsov, Vladimir
;     TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;     TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;     NUMBER OF SEQUENCES:  57
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;       STREET:  6300 Sears Tower, 233 South Wacker Drive
;       CITY:  Chicago
;       STATE:  Illinois
;       COUNTRY:  United States of America
;       ZIP:  60606-6402
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC DOS/MS DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/795,430
;       FILING DATE:
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US/60/001,427
;       FILING DATE:  01-AUG-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/671,573
;       FILING DATE:  28-JUN-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/601,132
;       FILING DATE:  14-FEB-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/585,895
;       FILING DATE:  12-JAN-1996
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/510,133
;       FILING DATE:  01-AUG-1995
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  08/340,011
;       FILING DATE:  14-NOV-1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Gass, David A.
;       REGISTRATION NUMBER:  38,153
;       REFERENCE/DOCKET NUMBER:  28963/33691
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  312/474-6300
;       TELEFAX:  312/474-0448
;       TELEX:  25-3856
;   INFORMATION FOR SEQ ID NO:  11:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  415 amino acids
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;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US-08-795-430-11


  Query Match             88.4%;  Score 931;  DB 4;  Length 415;
  Best Local Similarity   87.8%;  Pred. No. 4e-94;
  Matches  172;  Conservative    8;  Mismatches   12;  Indels    4;  Gaps    1;

Qy       1 FESGIDLSDAFLLASFAIAYASKEFPLIPSVSSVIEFLMIVLYFFYWKMFKQLPKGGWQ 60
           :| ||  |:|||| ||   |:  |||||||||||||:|||:||||:|||||||||||||
Db      32 FESGIGFSFAPPDGGPVKAFEGKDIFFQLFPSVSSVDFLMSVLYPDYWKMYKCQLPKGGWQ 91

Qy      61 HNREQANLNSRTEFTIKFAAAHYNTFILKSIDNEWRKTQCMPREVCIDVGKEFGVATNIF 120
             |  ||:|| :::|||||||||||||||||||||||||||||||||||||| |||||
Db      92 ----QPTLNTRTGDSVKFAAAHYNTFILKSIDNEWRKTQCMPREVCIDVGKEFGAATNIF 147

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNTSTGYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 180
           |||||||||||||||||||||||||| ||||||||||||||||||||||||||||||||||
Db     148 FKPPCVSVYRCGGCCNSEGLQCMNTSTGYLSKTLFEITVPLSQGPKPVTISFANHTSCRC 207

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     208 MSKLDVYRQVHSIIRR 223


RESULT   6
US-08-795-430-13
; Sequence 13, Application US/08795430
; Patent No. 6130071
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Vascular Endothelial Growth Factor C (VEGF-C)
;    TITLE OF INVENTION:  Protein and Gene, Mutants Thereof, and Uses Thereof
;    NUMBER OF SEQUENCES:  57
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/795,430
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/FI96/00427
;      FILING DATE:  01-AUG-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/671,578
;      FILING DATE:  28-JUN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/601,132
;      FILING DATE:  14-FEB-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/585,465
;      FILING DATE:  12-JAN-1996
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/510,133
;      FILING DATE:  01-AUG-1995
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  08/340,011
;      FILING DATE:  14-NOV-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  26967/38691
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-3856
;  INFORMATION FOR SEQ ID NO:  13:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  418 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-795-430-13


  Query Match             84.8%;  Score 893;  DB 4;  Length 418;
  Best Local Similarity   81.6%;  Pred. No. 4.6e-90;
  Matches  160;  Conservative   19;  Mismatches   17;  Indels    0;  Gaps    0;

Qy       1 FESGIDLSDAFLLASFAIAYASKDFPLIPSVSSVIEFLMIVLYFFYWKMFKQLPKGGWQ 60
           :|||    : ||  |||  |:|||||||||||||||||||||||||||||||:|||||||||
Db      31 YESGHGYYEEEPGAGEPKAHASKDLEEQLRSVSSVDELMTVLYPEYWKMFKCQLPKGGWQ 90

Qy      61 HNREQANLNSKTEETIKFAAAHYNTFILKSIDNEWRKTQCMPREVCIDVGKEFGVATNIF 120
           |||| :: ::|:::::|||||||| |||||| |||||| |||||:|:|||||  |||
Db      91 HNPEPHSSSDTRSDPDSLKFAAAHYNAEILKSIDIEWRKTQGMPREVCVDLGKEFGAITNTF 150

Qy     121 FKPPCVSVYRCGGCCNSEGLQCMNISISYLSKTLEEITVPLSQGPKPVTISFANHTSCRC 180
           ||||||:|||||||||||||| |:|:|||||||||| ||||||:|||||||||
Db     151 FKPPCVSIYRCGGCCNSEGLQCMNISTNYISKTLEEITVPLSHGPKPVTVSFANHISCRC 210

Qy     181 MSKLDVYRQVHSIIRR 196
           ||||||||||||||||
Db     211 MSKLDVYRQVHSIIRR 226


RESULT   9
US-08-999-811-4
; Sequence 4, Application US/08999811
; Patent No. 5932540
;  GENERAL INFORMATION:
;    APPLICANT:  HU, JING-SHAN
;    APPLICANT:  ROSEN, CRAIG A.
;    APPLICANT:  CAO, LIANG
;    TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  STERNE, KESSLER, GOLDSTEIN & FOX
;      STREET:  1100 NEW YORK AVENUE
;      CITY:  WASHINGTON
;      STATE:  DC
;      COUNTRY:  USA
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/999,811
;      FILING DATE:  HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/207,550
;      FILING DATE:  8-MAR-1994
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/465,968
;      FILING DATE:  06-JUN-1995
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  MARKOWICZ, KAREN R.
;      REGISTRATION NUMBER:  36,351
;      REFERENCE/DOCKET NUMBER:  1488.1000004
;    TELECOMMUNICATION INFORMATION:
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;       TELEPHONE:  (202)371 2600
;       TELEFAX:  (202)371 2540
;    INFORMATION FOR SEQ ID NO:  4:
;      SEQUENCE CHARACTERISTICS:
;       LENGTH:  350 amino acids
;       TYPE:  amino acid
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
US 09/999,811 4


  Query Match             82.5%;  Score 869;  DB 2;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-87;
  Matches  158;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      89 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSPTEKLIKEAAAHYNTEILKSIDNEWRKT 98
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSKTEKLIKEAAAHYNTEILKSIDNEWRKT 60

Qy      99 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 158
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy     159 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           ||||||||||||||||||||||||||||||||||||||
Db     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 158


RESULT  10
US 08/824,996 2
; Sequence 2, Application US/08824996B
; Patent No. 5935820
; GENERAL INFORMATION:
;  APPLICANT: Bu, Jing Shan
;  APPLICANT: Rosen, Craig A.
;  APPLICANT: Cao, Liang
;  TITLE OF INVENTION: Polynucleotides Encoding Vascular Endothelial Growth
;  TITLE OF INVENTION: Factor 2
;  FILE REFERENCE: PF112DI
;  CURRENT APPLICATION NUMBER: US/08/824,996B
;  CURRENT FILING DATE: 1997-03-27
;  EARLIER APPLICATION NUMBER: 08/207,550
;  EARLIER FILING DATE: 1994-03-08
;  NUMBER OF SEQ ID NOS: 9
;  SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
;   LENGTH: 350
;   TYPE: PRT
;   ORGANISM: Homo sapiens
US 08/824,996 2


  Query Match             82.5%;  Score 869;  DB 2;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-87;
  Matches  158;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      89 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSKTEKLIKEAAAHYNTEILKSIDNEWRKT 98
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSKTEKLIKEAAAHYNTEILKSIDNEWRKT 60

Qy      99 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 158
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy     159 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           ||||||||||||||||||||||||||||||||||||||
Db     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 158


RESULT  11
US 09/042,105 4
; Sequence 4, Application US/09042105
; Patent No. 6040157
; GENERAL INFORMATION:
;  APPLICANT:  BU, JING-SHAN
;  APPLICANT:  ROSEN, CRAIG A.
;  APPLICANT:  CAO, LIANG
;  TITLE OF INVENTION:  VASCULAR ENDOTHELIAL GROWTH FACTOR 2
;  NUMBER OF SEQUENCES:  45
;  CORRESPONDENCE ADDRESS:
;    ADDRESSEE:  STEPNE, KESSLER, GOLDSTEIN & FOX
;    STREET:  1100 NEW YORK AVENUE
;    CITY:  WASHINGTON
;    STATE:  DC
;    COUNTRY:  USA
;    ZIP:  20005
;  COMPUTER READABLE FORM:
;    MEDIUM TYPE:  Floppy disk
;    COMPUTER:  IBM PC compatible
;    OPERATING SYSTEM:  PC-DOS/MS DOS
;    SOFTWARE:  PatentIn Release #1.0, Version #1.30
;  CURRENT APPLICATION DATA:
;    APPLICATION NUMBER:  US/09/042,105
;    FILING DATE:  HEREWITH
;    CLASSIFICATION:
;  PRIOR APPLICATION DATA:
;    APPLICATION NUMBER:  US 08/207,550
;    FILING DATE:  8-MAR-1994
;    CLASSIFICATION:
;  PRIOR APPLICATION DATA:
;    APPLICATION NUMBER:  US 08/465,968
;    FILING DATE:  06-JUN-1995
;    CLASSIFICATION:
;  PRIOR APPLICATION DATA:
;    APPLICATION NUMBER:  TO BE ASSIGNED
;    FILING DATE:  24-DEC-1997
;    CLASSIFICATION:
;  ATTORNEY/AGENT INFORMATION:
;    NAME:  ERIC K. STEFFE
;    REGISTRATION NUMBER:  36,688
;    REFERENCE/DOCKET NUMBER:  1488.[illegible]/EKS
;  TELECOMMUNICATION INFORMATION:
;    TELEPHONE:  (202)371 2600
;    TELEFAX:  (202)371-2540
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  350 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US 09/042,105 4


  Query Match             82.5%;  Score 869;  DB 3;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-87;
  Matches  158;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      89 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSKTEKLIKEAAAHYNTEILKSIDNEWRKT 98
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MTVLYPEYWKMYKSQLEKQGWQHNPEQVNLNSKTEKLIKEAAAHYNTEILKSIDNEWRKT 60

Qy      99 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 158
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYLSKTLFEIT 120

Qy     159 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           ||||||||||||||||||||||||||||||||||||||
Db     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 158


RESULT  12
US 08/510,133A-33
; Sequence 33, Application US/08510133A
; Patent No. 6221839
;  GENERAL INFORMATION:
;       APPLICANT: Alitalo, Kari
```

```
;                  Joukov, Vladimir
;       TITLE OF INVENTION: Receptor Ligand
;       NUMBER OF SEQUENCES: 45
;       CORRESPONDENCE ADDRESS:
;            ADDRESSEE: Marshall, O'Toole, Gerstein, Murray & Borun
;            STREET: 6300 Sears Tower, 233 South Wacker Drive
;            CITY: Chicago
;            STATE: Illinois
;            COUNTRY: United States of America
;            ZIP: 60606-6402
;       COMPUTER READABLE FORM:
;            MEDIUM TYPE: Floppy disk
;            COMPUTER: IBM PC compatible
;            OPERATING SYSTEM: PC-DOS/MS-DOS
;            SOFTWARE: PatentIn Release #1.0, Version #1.25
;       CURRENT APPLICATION DATA:
;            APPLICATION NUMBER: US/08/510,133A
;            FILING DATE: 01-Aug-1995
;            CLASSIFICATION: <Unknown>
;       ATTORNEY/AGENT INFORMATION:
;            NAME: Gass, David A.
;            REGISTRATION NUMBER: 38,153
;            REFERENCE/DOCKET NUMBER: 28113/32863
;       TELECOMMUNICATION INFORMATION:
;            TELEPHONE: 312/474-6300
;            TELEFAX: 312/474-0448
;            TELEX: 25-3856
;    INFORMATION FOR SEQ ID NO: 33:
;       SEQUENCE CHARACTERISTICS:
;            LENGTH: 350 amino acids
;            TYPE: amino acid
;            TOPOLOGY: linear
;       MOLECULE TYPE: protein
;       SEQUENCE DESCRIPTION: SEQ ID NO: 33:
US-08-510-133A-33


  Query Match             82.5%;  Score 869;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-87;
  Matches  158;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      39 MTVLYPEYWKMYKSQLEKGGWQHNEEQANLNSETELIKFAAAHYNTEILKSIDNEWKKI 98
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1 MTVLYPEYWKMYKSQLEKGGWQHNEEQANLNSETELIKFAAAHYNTEILKSIDNEWKKI 60

Qy      99 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEIT 158
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEIT 120

Qy     159 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           |||||||||||||||||||||||||||||||||||||
Db     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 158


RESULT  13
US-08-585-895-33
; Sequence 33, Application US/08585895
; Patent No. 6245530
;  GENERAL INFORMATION:
;    APPLICANT:  Alitalo, Kari
;    APPLICANT:  Joukov, Vladimir
;    TITLE OF INVENTION:  Receptor Ligand
;    NUMBER OF SEQUENCES:  45
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Marshall, O'Toole, Gerstein, Murray & Borun
;      STREET:  6300 Sears Tower, 233 South Wacker Drive
;      CITY:  Chicago
;      STATE:  Illinois
;      COUNTRY:  United States of America
;      ZIP:  60606-6402
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/585,895
;      FILING DATE:
;      CLASSIFICATION:  514
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Gass, David A.
;      REGISTRATION NUMBER:  38,153
;      REFERENCE/DOCKET NUMBER:  28113/33072
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  312/474-6300
;      TELEFAX:  312/474-0448
;      TELEX:  25-3856
;  INFORMATION FOR SEQ ID NO:  33:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  350 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-585-895-33


  Query Match             82.5%;  Score 869;  DB 4;  Length 350;
  Best Local Similarity   100.0%;  Pred. No. 1.6e-87;
  Matches  158;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy      39 MTVLYPEYWKMYKSQLEKGGWQHNEEQANLNSETELIKFAAAHYNTEILKSIDNEWKKI 98
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Db       1 MTVLYPEYWKMYKSQLEKGGWQHNEEQANLNSETELIKFAAAHYNTEILKSIDNEWKKI 60

Qy      99 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEIT 158
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Db      61 QCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCMNTSTSYISKTLFEIT 120

Qy     159 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           |||||||||||||||||||||||||||||||||||||
Db     121 VPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 158


RESULT  14
US-08-915-795-9
; Sequence 9, Application US/08915795
; Patent No. 6235713
;  GENERAL INFORMATION:
;    APPLICANT:  Marc G. ACHEN
;    APPLICANT:  Andrew F. WILKS
;    APPLICANT:  Steven A. STACKER
;    APPLICANT:  Kari ALITALO
;    TITLE OF INVENTION:  GROWTH FACTOR
;    NUMBER OF SEQUENCES:  11
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;      STREET:  1200 G Street, NW, Suite 700
;      CITY:  Washington
;      STATE:  DC
;      COUNTRY:  United States of America
;      ZIP:  20005
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/915,795
;      FILING DATE:
;      CLASSIFICATION:  536
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  EVANS, Joseph D.
;      REGISTRATION NUMBER:  26,269
;      REFERENCE/DOCKET NUMBER:  1064/42983
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (202) 628-8800
```

```
;       TELEFAX:  (202) 628 8844
;       TELEX:  N/A
;   INFORMATION FOR SEQ ID NO:  9:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  321 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     ORIGINAL SOURCE:
;       TISSUE TYPE:  Mouse Lung
US-08-915,795-9


  Query Match             46.4%;  Score 489;  DB 4;  Length 321;
  Best Local Similarity   50.9%;  Pred. No. 8.7e-46;
  Matches   88;  Conservative   36;  Mismatches   39;  Indels   10;  Gaps    3;

Qy      26 EEQLRSVSGVDELMTVLYPEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 83
           |:|:|: ||:|||: : : | ||:::|:|:       :  |:::||  :  : :|||  |
Db      41 EQQIRAASSLEELQIAHSFDWKIWRCRLKL--- --KSLASMDSKSASHRSTRFAAIFY 94

Qy      84 NTEILESTDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 143
           :|| || || ||:|||| ||| |:|  | |  ||||||||||:|:|||||| ||: ||
Db      95 DIEILKVIDEEWQRTQCSPRETCVEVASELGKTTNTFFKPPCVNVFRCGGCCNEEGVMCM 154

Qy     144 NTSISYISKILEETIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
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Db     155 NTSISYISKQLEETSVPLISVPELVPVKIANHTGCKCLPTGP- RHPYSIIRR 205


RESULT  15
US-08-915,795-8
; Sequence 8, Application US/08915795
; Patent No. 6235714
;  GENERAL INFORMATION:
;     APPLICANT:  Marc G. ACHEN
;     APPLICANT:  Andrew F. WILKS
;     APPLICANT:  Steven A. STACKER
;     APPLICANT:  Kari ALITALO
;     TITLE OF INVENTION:  GROWTH FACTOR
;     NUMBER OF SEQUENCES:  11
;     CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Evenson, McKeown, Edwards & Lenahan P.L.L.C.
;       STREET:  1200 G Street, NW, Suite 700
;       CITY:  Washington
;       STATE:  DC
;       COUNTRY:  United States of America
;       ZIP:  20005
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/915,795
;       FILING DATE:
;       CLASSIFICATION:  530
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  EVANS, Joseph D.
;       REGISTRATION NUMBER:  26,269
;       REFERENCE/DOCKET NUMBER:  1064/42983
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (202) 628 8800
;       TELEFAX:  (202) 628 8844
;       TELEX:  N/A
;   INFORMATION FOR SEQ ID NO:  8:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  458 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     ORIGINAL SOURCE:
;       TISSUE TYPE:  Mouse Lung
US-08-915,795-8


  Query Match             46.4%;  Score 489;  DB 4;  Length 458;
  Best Local Similarity   50.9%;  Pred. No. 1e-45;
  Matches   88;  Conservative   36;  Mismatches   39;  Indels   10;  Gaps    3;

Qy      26 EEQLRSVSGVDELMTVLYTEYWKMYKCQLRKGGWQHNREQANLNSR--TEETIKFAAAHY 83
           |:|:|: ||:|||: : : | ||:::|:|:       :  |:::||  :  : :|||  |
Db      46 EQQIRAASSLEELQIAHSFDWKIWRCRLKL   -   KSLASMDSKSASHRSTRFAAIFY 99

Qy      84 NTEILESTDNEWRKTQCMPREVCIDVGKEFGVATNTFFKPPCVSVYRCGGCCNSEGLQCM 143
           :|| || || ||:|||| ||| |:|  | |  ||||||||||:|:|||||| ||: ||
Db     100 DIEILKVIDEEWQRTQCSPRETCVEVASELGKTTNTFFKPPCVNVFRCGGCCNEEGVMCM 159

Qy     144 NTSISYISKILEETIVPLSQGPKPVTISFANHTSCRCMSKLDVYRQVHSIIRR 196
           |||||||:|| |||||:|||  |: | :  |||| |:|:      |  :|||||
Db     160 NTSTSYISKQLEETSVPLISVPELVPVKIANHTGCKCLPTGP- RHPYSIIRR 210


Search completed: December 26, 2001, 11:29:42
Job time: 1895 sec
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